THE CITY RECORD.

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THE CITY RECORD.

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GEORGE B. McCLELLAN, MAYOR.

WILLIAM B. ELLISON, CORPORATION COUNSEL. HERMAN A. METZ, COMPTROLLER.

PATRICK J. TRACY, SUPERVISOR.

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BOROUGH OF MANHATTAN.

COMMISSIONER OF PUBLIC WORKS.

In accordance with the provisions of section 1546, chapter 466 of the Laws of 1901, I transmit the following report of the transactions of the offices of the Commissioner of Public Works, President of the Borough of Manhattan, for the week ending December 12, 1906:

Public Moneys Received During the Week.

For restoring and repaving pavement, General Account	$1,873 50
For redemption of obstructions seized	13 50
For vault permits	1,246 72
For shed permits	20 00
For sewer connections	373 70
For bay window permits	110 71
Total	$3,638 13

Permits Issued.

Permits to open streets, to make sewer connections	64
Permits to place building material on streets	89
Permits to construct street vaults	1
Permits to construct sheds	4
Permits to cross sidewalks	2
Permits for subways, steam mains and various connections	408
Permits for railway construction and repairs	2
Permits to repair sidewalks	48
Permits for sewer connections	16
Permits for sewer repairs	20
Permits for bay windows	15
Permits for ornamental projections	2
Total	671

Obstructions Removed.

Obstructions removed from various streets and avenues	12

Repairs to Pavement.

Square yards of pavement repaired	4,382

Repairs to Sewers.

Linear feet of sewer built	329
Linear feet of sewer cleaned	18,350
Linear feet of sewer examined	12,600
Basins cleaned	240
Basins examined	283
Requisitions drawn on Comptroller	$154,447 79

Statement of Laboring Force Employed During the Week Ending December 8, 1906.

Repaving and Renewal of Pavements—	
Mechanics	248
Laborers	188
Teams	5
Carts	120
Boulevards, Roads and Avenues (maintenance of)—	
Mechanics	9
Laborers	72
Teams	29
Carts	19
Roads, Streets and Avenues—	
Laborers	22
Teams	11
Carts	5
Sewers, Maintenance, Cleaning, etc.—	
Mechanics	98
Laborers	142
Teams	11
Carts	49
Cleaners	1
Cleaning Public Buildings, Baths, etc.—	
Mechanics	177
Laborers	96
Carts	32
Bath Attendants	191
Cleaners	257

Changes in Working Force for Week Ending December 8, 1906.

Bureau of Highways—
One Paver, $4.96, reinstated.
Two Laborers, $2, dropped.
One Laborer, $2.50, dropped.
One Rammer, $3.84, dropped.
One Rammer, $3.84, reinstated.
One Automobile Engineman, $1,500, appointed.
One Cartman, $3.50, removed.
One Cartman, $3.50, appointed.
One Cartman, $3.50, deceased.

Bureau of Sewers—
One Assistant Foreman, $3, transferred from Highways.
One Sewer Cleaner, $2.50, appointed.
One Laborer, Rockman, $2.25, resigned.
One Inspector of Construction, $4, appointed.

Bureau of Public Buildings and Offices—
Two Laborers, $2.50, appointed.
One Laborer, $2.50, transferred from Highways.
One Cleaner, $30, reinstated.
One Laborer, $2, transferred from Highways.

Respectfully,
WM. DALTON, Commissioner of Public Works.

AQUEDUCT COMMISSION.

Aqueduct Commissioners Office,
Room 207, No. 280 Broadway,
New York, December 22, 1906.

Abstract of amount of expenditures and liabilities of the Aqueduct Commissioners during the month of November, 1906, as required by section 39, chapter 490, Laws of 1883:

Expenditures.

Salaries, Commissioners and employees	$23,257 32	
Traveling and incidental expenses	671 39	
Rent	1,875 00	
Taxes on lands	111 62	
Experts examining construction work	375 00	
Stationery	444 60	
Fencing around reservoirs, etc	190 95	
Books, maps and drawings	203 62	
Drawing materials and field implements	905 50	
Testing machines and tests	21 72	
Heating headquarters	39 00	
Horses, wagons and their maintenance	1,443 48	
		$29,629 20
Monthly amounts of estimates due contractors for work done under contract, Jerome Park, Cross River and Croton Falls reservoirs		127,071 20
Total expenditures		$156,700 40

Liabilities.

Rent	$625 00	
Salaries, Commissioners and employees	15,388 20	
Traveling and incidental expenses	423 08	
Books, maps and drawings	217 90	
Taxes on lands	99 76	
Experts examining construction work	375 00	
Stationery	332 70	
Maintenance—Horses, wagons and harness	72 34	
Field implements	59 46	
Testing machines and tests	2 25	
Heating headquarters	20 00	
		$17,615 69
Monthly amounts of estimates due contractors for work done, contract, Jerome Park, Cross River and Croton Falls reservoirs and railings on New Croton dam		106,303 45
Total liabilities		$123,919 14

I hereby certify that the foregoing is a correct and true abstract of account of the expenditures and liabilities of the Aqueduct Commissioners for the month of November, 1906, the said account being on file in the office of the Comptroller of The City of New York.

HARRY W. WALKER, Secretary.

DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY.

REPORT FOR THE YEAR ENDING DECEMBER 31, 1905.

Department of Water Supply, Gas and Electricity,
Commissioner's Office, Nos. 13 to 21 Park Row,
City of New York, November 1, 1906.

Hon. GEORGE B. McCLELLAN, Mayor:

Dear Sir—Herewith I beg to submit the annual report of the transactions of the Department of Water Supply, Gas and Electricity for the year ending December 31, 1905.

The condition of the water supply for the Boroughs of Manhattan and The Bronx, Queens and Richmond, is covered by the report of Mr. I. M. de Varona, Chief Engineer, who also reports on the same subject for the Borough of Brooklyn.

The work of the Bureau of Water Register, Borough of Manhattan, is taken care of in a report by Joseph W. Savage; the Deputy Commissioners include in their reports the same matter for their respective boroughs.

The report on gas and electric lighting and the operations of the Bureau of Lamps and Gas for the Boroughs of Manhattan and The Bronx will be forwarded later as a supplement, as per letter of Chief Engineer of Light and Power Charles F. Lacombe, document No. VIII.; for the Borough of Brooklyn Assistant Engineer A. E. Allen deals with the subject.

The affairs of the Electrical Bureau for the Boroughs of Manhattan and The Bronx are reported by Electrical Engineer Frank E. Brown; Electrical Engineer H. S. Wynkoop reports for the Borough of Brooklyn; Chief Inspector J. H. Burke for the Borough of Queens and Deputy Commissioner Edward I. Miller for the Borough of Richmond.

The following documents are included in the report:

I. Comparative statement of collections for account of the water service, arrears and income of the Department for all boroughs for the year ending December 31, 1904 and 1905, also a summary of increases for 1905 over 1904.

Ia. Statement showing expenditures during 1905 chargeable to appropriations of 1904, appropriations of 1905, expenditures during 1905 and balances on December 31, of appropriations of 1905; also titles of trust and special accounts, balances on December 31, 1904, credits during 1905, expenditures during the year 1905 and balances on December 31, 1905.

II. Report of Chief Engineer I. M. De Varona relative to the water supply for the Boroughs of Manhattan, The Bronx, Queens and Richmond.

III. Report of Electrical Engineer Frank E. Brown of the operations of the Electrical Bureau for the Boroughs of Manhattan and The Bronx.

IV. Reports of the heads of bureaus for the Borough of Brooklyn transmitted by Deputy Commissioner William C. Cozier.

IVa. Bureau of Chief Engineer.
IVb. Bureau of Electricity and Gas.
IVc. Bureau of Lamps and Lighting.
IVd. Bureau of Water Rates.
IVe. Office of Supplies and Accounts.

V. Reports for the Borough of Queens by Deputy Commissioner Charles C. Wissel.

VI. Reports for the Borough of Richmond by Deputy Commissioner Edward I. Miller.

VII. Report of Water Register Joseph W. Savage for the Borough of Manhattan.

VIII. Letter of Chief Engineer of Light and Power Charles F. Lacombe in lieu of report to be forwarded later as a supplement.

Respectfully,
JOHN H. O'BRIEN, Commissioner.

I.

DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY.

Comparative Statement of Collections for Accounts of the Water Service, Arrears and Income of the Department for All Boroughs for the Years Ending December 31, 1904 and 1905.

	Manhattan. 1904.	Manhattan. 1905.	The Bronx. 1904.	The Bronx. 1905.	Brooklyn. 1904.	Brooklyn. 1905.	Queens. 1904.	Queens. 1905.	Richmond. 1904.	Richmond. 1905.	All Boroughs. 1904.	All Boroughs. 1905.
Regular annual frontage rates	$1,982,092 04	$2,048,899 95	$322,661 00	$355,592 61	$1,608,428 28	$1,698,479 26	$57,430 17	$54,562 90	$444 96	$404 44	$3,971.056 45	$4,157,939 16
Penalties (section 476, Charter)	22,202 91	18,846 95	6,663 79	6,225 25	25,952 30	26,832 56	2,158 83	1,312 83	7 10	5 17	56,984 93	53,222 76
Meter Charges—												
Buildings	2,960,829 53	3,000,856 73	187,546 78	255,523 43	775,869 84	905,086 63	93,349 29	103,343 09	2,646 32	5,069 44	4,020,241 76	4,269,879 32
Riverdale	.....	.....	4,179 40	2,398 00	.....	.....	.....	.....	.....	.....	4,179 40	2,398 00
Steamboats	157,724 70	157,816 77	6,461 00	Nil.	.....	.....	.....	.....	.....	.....	164,185 70	157,816 77
Permits—												
Building purposes	43,619 68	62,002 43	21,299 70	43,255 97	36,769 23	64,555 75	3,855 18	3,171 37	34 15	120 07	105,577 94	173,105 59
Extras, boilers, etc	4,211 46	3,500 12	5,378 98	6,111 91	.....	.....	627 50	289 45	.....	.....	10,217 94	9,901 48
Tugs	20,232 50	24,247 50	.....	.....	.....	.....	.....	.....	.....	.....	20,232 50	24,247 50
Street sprinkling	7,332 88	11,110 42	.....	.....	.....	.....	.....	.....	.....	.....	7,332 88	11,110 42
Tapping mains	9,164 50	9,362 50	7,782 00	9,769 50	13,512 50	22,863 50	2,104 00	2,000 75	.....	.....	32,563 00	43,996 25
Repairs and labor and materials	5,388 20	6,158 11	.....	.....	1,951 72	7,626 39	.....	.....	.....	.....	7,339 92	13,784 50
Meter setting	4,304 72	11,953 74	1,335 84	1,196 11	.....	.....	.....	.....	.....	.....	5,640 56	13,149 85
Total collections	$5,217,103 12	$5,354,755 22	$563,308 49	$680,072 78	$2,462,483 87	$2,725,444 09	$159,524 97	$164,680 39	$3,132 53	$5,599 12	$8,405,552 98	$8,930,551 60
Arrears, 1903-04, water, returned to Receiver of Taxes	292,114 42	329,861 66	49,329 21	49,368 28	194,340 59	730,508 71	56,887 93	24,783 86	Nil.	Nil.	592,672 15	1,134,522 51
Total Department income	$5,509,217 54	$5,684,616 88	$612,637 70	$729,441 06	$2,656,824 46	$3,455,952 80	$216,412 90	$189,464 25	$3,132 53	$5,599 12	$8,998,225 13	$10,065,074 11

Summary of Increases for 1905 over 1904.

	Manhattan. 1905.	The Bronx. 1905.	Brooklyn. 1905.	Queens. 1905.	Richmond. 1905.	All Boroughs. 1905.
Increase, 1905, collections	$137,652 10	$116,764 29	$262,960 22	$5,155 42	$2,466 59	$524,998 62
Increase, 1905, returns of arrears.	37,747 24	39 07	536,168 12	*32,104 07	Nil.	541,850 36
Increase, 1905, income	$175,399 34	$116,803 36	$799,128 34	*$26,948 65	$2,466 59	$1,066,848 98

* Decrease.

I-a.

Statement Showing Expenditures during 1905 Chargeable to Appropriations of 1904; Appropriations of 1905; Expenditures during 1905 and Balances on December 31 of Appropriations of 1905. Also Titles of Trust and Special Accounts; Balances on December 31, 1904; Credits during 1905; Expenditures during the Year 1905, and Balances on December 31, 1905.

Titles of Appropriations.	Expenditures During 1905, Chargeable to Appropriations of 1904.	Appropriations With Transfers, 1905.	Expenditures During the Year 1905.	Balances of Appropriations of 1905 on December 31, 1905.
Salaries—				
General Administration	.....	$36,965 25	$36,413 82	$551 43
Central Offices	.....	32,050 00	32,044 71	5 29
Bureau of Chief Engineer	.....	11,850 00	11,849 89	11
Bureau of Water Register	$48 57	127,020 00	126,913 86	106 14
Croton Water System	106 45	33,097 00	33,011 91	85 09
Bronx River Works, Maintenance and Repairs	.....	4,275 00	4,275 00	.....
Lighting and Electricity	19 19	75,612 50	75,592 58	19 92
Office of Deputy Commissioner, etc., The Bronx	7 50	39,480 00	39,292 96	187 04
Maintenance of Croton Water System	50,173 62	387,774 50	326,032 48	61,742 02
Bronx River Works, Maintenance and Repairs	2,889 86	32,000 00	29,805 63	2,194 37
Supplies and Contingencies	3,697 52	21,637 00	20,100 42	1,536 58
Public Drinking Hydrants	368 93	3,000 00	1,952 83	1,047 17
Repairing and Renewal of Pipes, Stopcocks, etc	26,288 08	270,000 00	262,001 72	7,998 28
Water Supply for the Twenty-fourth Ward	1,288 37	9,000 00	8,872 36	127 64
Lamps and Lighting	110,521 66	1,724,028 50	126,438 14	1,597,590 36
Borough of Brooklyn.				
Salaries—				
Office of Deputy Commissioner	.....	11,080 00	10,987 50	92 50
Office of Water Registrar	.....	50,900 00	50,631 82	268 18
Laboratory	.....	7,300 00	7,246 18	53 82
Lighting and Electricity	36 90	43,556 00	43,120 26	435 74
Supplies and Contingencies	774 30	8,000 00	4,986 08	3,013 92
Rentals of Fire Hydrants	6,250 00	25,000 00	18,750 00	6,250 00
Lamps and Lighting	47,846 76	1,102,585 85	161,284 14	941,301 71
Borough of Queens.				
Salaries—				
Office of Deputy Commissioner	.....	19,740 00	19,612 21	127 79
Pumping Stations	.....	34,497 50	34,373 45	124 05
Lighting and Electricity	.....	12,837 00	12,836 76	24
Pumping Stations, Fuel and Supplies	9,065 61	27,775 00	23,082 13	4,692 87
Maintenance and Repairs of Water Pipes, etc	2,655 49	31,200 00	30,767 81	432 19
Supplying Water to Long Island City	32,483 70	125,000 00	115,795 86	9,204 14
Rentals of Fire Hydrants	22,267 82	50,000 00	23,647 70	26,352 30
Lamps and Lighting	253,445 38	382,889 13	72,811 52	310,077 61
Supplies and Contingencies	1,385 86	3,500 00	2,181 12	1,318 88
Borough of Richmond.				
Salaries—				
Office of Deputy Commissioner	.....	6,650 00	6,640 70	9 30
Lighting and Electricity	.....	3,699 50	3,698 75	75
Pumping Stations, Salaries and Supplies	1,101 55	13,100 00	10,946 63	2,153 37
Lamps and Lighting	480 00	157,900 00	1,440 00	156,460 00
Rentals of Fire Hydrants	180 00	29,052 50	180 00	28,872 50
Supplies and Contingencies	253 23	1,000 00	960 99	39 01
Total	$573,636 35	$4,955,052 23	$1,790,579 92	$3,164,472 31

Note—Expenditures were also made during the year chargeable to appropriations of 1903 to the amount of $9,883.19.

Titles of Trust and Special Accounts.	Balances on December 31, 1904.	Credits During Year 1905.	Expenditures During Year 1905.	Balances on December 31, 1905.
Additional Water Fund of The City of New York	$44,177 34	.....	$7,109 57	$37,067 77
Water Main Fund No. 3	126,637 87	.....	109,473 46	17,164 41
Water Fund, Manhattan and The Bronx	2,268,740 31	$22,806 87	968,670 46	1,322,876 72
Water Meter Fund No. 2	33,622 48	31,112 79	45,307 18	19,428 09
Construction, etc., High Pressure Service, Manhattan	3,931,007 50	.....	56,390 09	3,874,617 41
Laying Mains in South Boulevard, Near One Hundred and Forty-first Street.	.....	17,000 17	989 10	16,011 07
Commission of Engineers for Investigation, etc., of Water Supply	472 25	.....	99 00	373 25
Revenue Bond Fund for Emergency Forces	.....	42,560 00	34,318 89	8,241 11
Revenue Bond Fund to Pay Prevailing Rate of Pay of Caulkers	.....	13,255 00	13,255 00	.....
Revenue Bond Fund for Photometric Stations	.....	20,000 00	2,927 14	17,072 86
Revenue Bond Fund for Lighting Public School Buildings During 1904	140,000 00	.....	182 44	139,817 56
Revenue Bond Fund for Maintenance, etc., New York and Westchester Water Company Plant	4,224 79	.....	4,224 79	.....
Water Fund, Brooklyn	1,901,795 43	20,605 50	662,295 81	1,260,105 12
Water Main Fund, Brooklyn	63,045 54	.....	31,455 42	31,590 12
Water Construction, Borough of Brooklyn	656,779 07	.....	7,268 92	649,510 15
Maintenance and Distribution of Water Supply in the Borough of Brooklyn.	.....	1,525,221 93	1,121,425 54	403,796 39
Construction, etc., High Pressure Service, Brooklyn	1,461,815 28	1,800 75	332,543 34	1,131,072 69
Water Fund, Queens	546,206 25	103,001 25	130,323 32	518,884 18
Revenue Bond Fund for Laying Water Mains, Queens	1,606 02	.....	1,429 22	176 80
Water Fund, Richmond	27,614 88	1,500,000 00	4,168 53	1,523,446 35
Total	$11,207,745 01	$3,297,364 26	$3,533,857 22	$10,971,252 05

Note—Expenditures were also made during the year to the amount of $307,561.94, chargeable to Maintenance and Distribution of Water Supply in the Borough of Brooklyn, 1904.

II.

Department of Water Supply, Gas and Electricity,
Office of Chief Engineer, Nos. 13 to 21 Park Row,
City of New York, February 15, 1906.

Hon. WILLIAM B. ELLISON, Commissioner:

Sir—I beg to report herewith on the condition of the water supply in the Boroughs of Manhattan, The Bronx, Queens and Richmond for the year ending December 31, 1905; work done during the year on the supply and distribution system; expenditures provided for under the Tax Levy Budget, as well as under the appropriations made by Bond Issues, and balances remaining on January 1, 1906.

On February 1, 1905, while holding the position of Chief Engineer of the Borough of Brooklyn, I was directed by the Commissioner to take charge on and after that date as Acting Chief Engineer for the Boroughs of Manhattan, The Bronx, Queens and Richmond, retaining my position as Chief Engineer in Brooklyn; and on April 1, 1905, I was appointed permanently as Chief Engineer of the above boroughs while continuing to act as Chief Engineer for the Borough of Brooklyn.

In accordance with the plan outlined in the report for the quarter ending March 31, 1905, and carried out in the two subsequent quarterly reports, in the present one I have endeavored to "embody a proper and detailed record of the work done and of the cost of the same, with the various items of expense duly classified so as to facilitate comparison, thus securing the only safe basis for progressive improvement and efficient management. I have before stated, in similar reports, that an intelligent and complete system of records and accounts, readily understood and accessible at all times, is the most effectual bar to extravagance and abuse, and that, in my opinion, in these reports the operations of the Department should be minutely detailed so that our citizens can readily find therein how the money was expended in every case and what return the City received therefrom." The difficulties of gathering and tabulating the data required to carry out the above plan have been considerable, owing to the deficiency of early records and the number of radical changes required in the manner of keeping the same and in conducting the work. I believe that the improvement in this respect will be apparent and that before long our reports "will contain all the public and detailed information to which our citizens are entitled."

FINANCIAL.

Receipts and Expenditures.

BOROUGH OF MANHATTAN.

Receipts.

Regular annual frontage rates and penalties	$2,067,687 30		
Meter charges, buildings and steamboats	3,158,733 10		
Miscellaneous charges	100,860 47		
Total credit, Sinking Fund, for the Payment of Interest on City Debt	.....	$5,327,280 87	
Permits for tapping	$9,362 50		
Repairs, Bureau of Chief Engineer	6,158 11		
Total credit of General Fund	15,520 61		
Meter setting, credit of Water Meter Fund No. 2	11,953 74		
Arrears, water charges, 1903, and prior, returned to Department of Finance September, 1905	.....	.....	$329,861 66

BOROUGH OF THE BRONX.

Regular annual frontage rates and penalties	361,817 86		
Meter charges, buildings and Riverdale	257,921 43		
Miscellaneous charges	49,367 88		
Total credit of Sinking Fund for the Payment of Interest on City Debt	.....	668,107 17	
Permits for tapping, credit of General Fund	9,769 50		
Meter setting, credit of Water Meter Fund No. 2	1,196 11		
Arrears, water charges, 1903 and prior, returned to Department of Finance, September, 1905	.....	.....	49,368 28
Total collections, 1905	$6,034,828 00		
Total, credit of Sinking Fund, 1905	.....	$5,995,388 04	
Total returns of arrears, 1905			$379,229 94

Expenditures.

BOROUGHS OF MANHATTAN AND THE BRONX.

Appropriations for 1905.

Salaries, Bureau of Chief Engineer—			
Appropriation, with transfers		$11,850 00	
Expended, per voucher, 1905		11,849 89	
Cash balance, January 1, 1906			$0 11
Salaries, Croton Water System—			
Appropriation, with transfers		$33,097 00	
Expended, per voucher, 1905		33,011 91	
Balance, January 1, 1906			$85 09
Salaries, Bronx River Works—			
Appropriation, with transfers		$4,275 00	
Expended, per voucher, 1905		4,275 00	
Balance, January 1, 1906			.....
Maintenance of Croton Water System—			
Appropriation, with transfers		$387,774 50	
Expended, per voucher, 1905:			
Salaries	$214,406 49		
Contracts	60,365 68		
Sundries	72,354 38		
		347,126 55	
Cash balance, January 1, 1906		$40,647 95	
Outstanding liabilities (estimated):			
Contracts	$39,056 45		
Sundries	21,116 66		
Taxes	35,000 00		
		95,173 11	
Estimated deficit, January 1, 1906			$54,525 16

During the last quarter of 1905, contracts for various supplies were entered into, as per the ruling of the Comptroller, which properly belong to the appropriation for 1906. Some provision must be also made to meet the bills for taxes on the City's reservoir and aqueduct property located in Westchester and Putnam counties.

In the past, while the Board of Estimate and Apportionment has overlooked these charges in connection with the Departmental Budget, we have been obliged to draw on this account for large sums to meet the tax bills when presented, thereby depleting the funds appropriated for other purposes.

I do respectfully recommend that an issue of bonds be made to apply to these charges for all taxes outstanding and including the year 1906, before the close of which provision should be made by the Board of Estimate and Apportionment to meet future bills for taxes.

Bronx River Works, Maintenance and Repairs—			
Appropriation, with transfers		$32,000 00	
Expended, per voucher, 1905:			
Salaries	$21,441 75		
Sundries	9,189 17		
		30,630 92	
Cash Balance, January 1, 1906		$1,369 08	
Outstanding liabilities (estimated):			
Sundries	$542 50		
Taxes	6,000 00		
		6,542 50	
Estimated deficit, January 1, 1906			$5,173 42

A transfer of funds must be made to meet outstanding bills for supplies and salaries. Also, some provision must be made by the Board of Estimate and Apportionment to meet the taxes on reservoir and aqueduct property located in Westchester County, and I would recommend the same procedure as for the account of Maintenance of Croton Water System, Manhattan and The Bronx.

Repairing and Renewal of Pipes, Stop-cocks, etc.—			
Appropriation, with transfers		$270,000 00	
Expended, per Voucher, 1905:			
Salaries	$195,826 79		
Contracts	34,163 45		
Sundries	32,711 38		
		262,701 62	
Cash balance, January 1, 1906		$7,298 38	
Outstanding Liabilities (Estimated):			
Contracts	$7,894 35		
Sundries	6,400 60		
		14,294 95	
Estimated deficit, January 1, 1906			$6,996 57

Of the above outstanding contracts about one-half were entered into, by the ruling of the Comptroller, during December and should properly belong to the 1906 Budget.

Of the outstanding sundry open accounts the greater part is for orders for restoring asphalt pavements, given to the original contracting parties, covering in each case a number of different locations.

They have been unable to complete the work during 1905, and a part of this expense properly belongs to 1906 Budget, and it will be necessary to ask for a transfer of funds to meet the demands.

Public Drinking Hydrants—			
Appropriation, with transfer		$3,000 00	
Expended, per voucher, 1905		1,952 83	
Cash balance, January 1, 1906		$1,047 17	
Outstanding liabilities (estimated)		417 00	
Estimated balance, January 1, 1906			$630 17

This estimated balance may be appreciably reduced when all bills have been rendered.

Water Supply for the Twenty-fourth Ward—			
Appropriation, with transfers		$9,000 00	
Expended, per voucher, 1905		8,872 36	
Cash balance, January 1, 1906			$127 64

The water supply furnished for this account has been discontinued and the above balance is transferable.

Appropriations for 1904.

Salaries, Bureau of Chief Engineer—			
Balance, January 1, 1905		$354 09	
Expended, per voucher, 1905		.....	
Cash balance, January 1, 1906			$354 09

Salaries, Croton Water System—

Balance, January 1, 1905		$1,611 85
Expended, per voucher, 1905		106 45
Cash balance, January 1, 1906		$1,505 40

Maintenance of Croton Water System, Manhattan and The Bronx—

Balance, January 1, 1905		$56,174 90
Expended, per voucher, 1905:		
Salaries	$1,896 64	
Contracts	24,124 36	
Sundries	22,140 21	
		48,161 21
Cash balance, January 1, 1906		$8,013 69
Outstanding liabilities (estimated)		6,394 00
Estimated balance, January 1, 1906		$1,619 69

This balance does not include tax bills on reservoir and aqueduct property and provision must be made to meet same; the same procedure for 1905 account obtaining for this account as recommended heretofore in this statement.

Bronx River Works, Maintenance and Repairs—

Balance, January 1, 1905		$4,014 08
Expended, per voucher, 1905:		
Salaries	$154 50	
Sundries	1,969 55	
		2,124 05
Cash balance, January 1, 1906		$1,890 03

This balance will not be sufficient to meet tax bills and provision should be made to transfer funds or otherwise to pay same when presented.
Same conditions obtain for this as for the 1905 account.

Public Drinking Hydrants—

Balance, January 1, 1905		$1,035 83
Expended, per voucher, 1905		342 01
Cash balance, January 1, 1906		$693 82

Repairing and Renewal of Pipes, Stopcocks, etc.—

Balance, January 1, 1905		$26,545 11
Expended, per voucher, 1905:		
Salaries	$2,140 45	
Contracts	8,651 83	
Sundries	11,539 77	
		22,332 05
Cash balance, January 1, 1906		$4,213 06
Outstanding liabilities (estimated)		844 00
Estimated balance, January 1, 1906		$3,369 06

Water Supply for the Twenty-fourth Ward—

Balance, January 1, 1905		$3,447 90
Expended, per voucher, 1905		1,288 37
Cash balance, January 1, 1906		$2,159 53

Appropriations for 1903.

Maintenance of Croton Water System, Manhattan and The Bronx—

Balance, January 1, 1905		$21,556 75
Expended, per voucher, 1905:		
Contracts	$514 90	
Sundries	5,665 44	
		6,180 34
Cash balance, January 1, 1906		$15,376 41
Outstanding liabilities (estimated)		918 00
Estimated balance, January 1, 1906		$14,458 41

This balance may not be sufficient to pay the accrued taxes on City's property, and provision should be made to meet same, as recommended heretofore for 1905 and 1904 accounts.

Bronx River Works, Maintenance and Repairs—

Balance, January 1, 1905		$14,163 99
Expended, per voucher, 1905		873 02
Cash balance, January 1, 1906		$13,290 97
Outstanding liabilities (estimated)		874 00
Estimated balance, January 1, 1906		$12,416 97

This balance may be sufficient to pay the accrued taxes on the City's property.

Public Drinking Hydrants—

Balance, January 1, 1905		$665 05
Balance, January 1, 1906		$665 05

This balance is transferable.

Repairing and Renewal of Pipes, Stopcocks, etc—

Balance, January 1, 1905		$19,348 88
Expended, per voucher, 1905		530 50
Cash balance, January 1, 1906		$18,818 38
Outstanding liabilities (estimated)		622 00
Estimated balance, January 1, 1906		$18,196 38

Appropriations for 1902.

Additional Fire Hydrants—

Balance, January 1, 1905		$3,190 91
Expended, per voucher, 1905		992 80
Cash balance, January 1, 1906		$2,198 11

Repairing and Renewal, Pipes, Stop-cocks, etc.—

Balance, January 1, 1905		$5,584 28
Expended, per voucher, 1905		23 00
Cash balance, January 1, 1906		$5,561 28

Appropriation for 1900.

Aqueduct, Maintenance and Repairs—

Balance, January 1, 1905		$2,265 61
Expended, per voucher, 1905		142 40
Cash balance, January 1, 1906		$2,123 21

Bond Accounts.

Water Fund, Manhattan and The Bronx—

Available during 1905			$6,048,014 05
Expended, per voucher, 1905:			
Salaries	$141,046 97		
Contracts	729,577 55		
Sundries	88,725 66		
		959,350 18	
Cash balance, January 1, 1905			$5,088,663 87
Outstanding Liabilities (Estimated):			
Contracts	$1,012,653 91		
Sundries	24,730 68		
		1,037,384 59	
Estimated balance, January 1, 1906			$4,051,279 28

Water Main Fund No. 3—

Available during 1905			$114,978 00
Expended, per voucher, 1905:			
Salaries	$6,826 00		
Contracts	94,233 43		
Sundries	12,393 56		
		113,452 99	
Cash balance, January 1, 1906			$1,525 01
Outstanding liabilities (estimated)			200 00
Estimated balance, January 1, 1906			$1,325 01

High Pressure Fire Service—

Available during 1905			$3,927,898 40
Expended, per voucher, 1905:			
Salaries	$47,494 08		
Contracts	.....		
Sundries	9,011 17		
		56,505 25	
Cash balance, January 1, 1906			$3,871,393 15
Outstanding Liabilities (Estimated):			
Contracts	$2,824,282 75		
Sundries	1,878 00		
		2,826,160 75	
Estimated balance, January 1, 1906			$1,045,232 40

Additional Water Supply, City of New York—

Available during 1905		$51,434 18
Expended, per voucher, 1905		7,109 57
Cash balance, January 1, 1906		$44,324 61

Revenue Bond Fund, Purchase, etc., Westchester Water Company, Plant etc.—

Available during 1905		$4,224 81
Expended, per voucher, 1905		4,224 79
Balance, January 1, 1906		$0 02
Outstanding liabilities (estimated)		25 00
Deficit, January 1, 1906		$24 98

Southern Boulevard, Water Mains, etc.—

Available during 1905		$17,000 00
Expended, per voucher, 1905		989 10
Cash balance, January 1, 1906		$16,010 90
Outstanding liabilities (estimated)		11,033 40
Estimated balance, January 1, 1906		$4,977 50

Drinking Fountains, The Bronx, etc., Erection of—

Available during 1905		$650 00
Expended, per voucher, 1905		.....
Cash balance, January 1, 1906		$650 00

Revenue Bond Fund, Salaries of Pipe Caulkers and Tappers—

Available during 1905		$13,255 00
Expended, per voucher, 1905		13,255 00
Balance, January 1, 1906		.....

Revenue Bond Fund, Emergency Force, Seven Repair Stations—

Available during 1905		$42,560 00
Expended, per voucher, 1905		34,318 89
Cash balance, January 1, 1906		$8,241 11

SUMMARY.

BOROUGHS OF MANHATTAN AND THE BRONX.

	Funds with Transfer Available During 1905.	Expended in 1905.	Cash Balance January 1, 1906.	Estimated Outstanding Liabilities Not Including Salaries, January 1, 1906.	Estimated Balance January 1, 1906.
Appropriation Accounts.					
Salaries, Bureau of Chief Engineer—					
1905—Budget	$11,850 00	$11,849 89	$0 11	.....	.....
1904—Balance January 1, 1905	354 09	.....	354 09	.....	.....
Salaries, Croton Water System—					
1905—Budget	33,097 00	33,011 91	85 09	.....	.....
1904—Balance January 1, 1905	1,611 85	106 45	1,505 40	.....	.....
Salaries, Bronx River Works—					
1905—Budget	4,275 00	4,275 00	.....	.....	.....
Maintenance of Croton Water System—					
1905—Budget	387,774 50	347,126 55	40,647 95	$95,173 11	† $54,525 16
1904—Balance January 1, 1905	56,174 90	48,161 21	8,013 69	* 6,394 00	1,619 69
1903—Balance January 1, 1905	21,556 75	6,180 34	15,376 41	* 918 00	14,458 41
Bronx River Works, Maintenance and Repairs—					
1905—Budget	32,000 00	30,630 92	1,369 08	6,542 50	† 5,173 42
1904—Balance January 1, 1905	4,014 08	2,124 05	1,890 03	*.....	1,890 03
1903—Balance January 1, 1905	14,163 99	873 02	13,290 97	* 874 00	12,416 97
Public Drinking Hydrants—					
1905—Budget	3,000 00	1,952 83	1,047 17	417 00	630 17
1904—Balance January 1, 1905	1,035 83	342 01	693 82	.....	693 82
1903—Balance January 1, 1905	665 05	.....	665 05	.....	665 05
Repairing and Renewal of Pipes, Stop Cocks, etc.—					
1905—Budget	270,000 00	262,701 62	7,298 38	14,294 95	† 6,996 57
1904—Balance January 1, 1905	26,545 11	22,332 05	4,213 06	844 00	3,369 06
1903—Balance January 1, 1905	19,348 88	530 50	18,818 38	622 10	18,196 38
1902—Balance January 1, 1905	5,584 28	23 00	5,561 28	.....	5,561 28
Water Supply for Twenty-fourth Ward—					
1905—Budget	9,000 00	8,872 36	127 64	.....	127 64
1904—Balance January 1, 1905	3,447 90	1,288 37	2,159 53	.....	2,159 53
Aqueduct, Maintenance and Repair—					
1900—Balance January 1, 1905	2,265 61	142 40	2,123 21	.....	2,123 21
Additional Fire Hydrants—					
1902—Balance January 1, 1905	3,190 91	992 80	2,198 11	.....	2,198 11
Total disbursements account of appropriations	.....	$783,517 28			
Bond Accounts.					
Water Fund, Manhattan and The Bronx	6,048,014 05	$959,350 18	5,088,663 87	1,037,384 59	4,051,279 28
Water Main Fund No. 3	114,978 00	113,452 99	1,525 01	200 00	1,325 01
High Pressure Fire Service	3,927,898 40	56,505 25	3,871,393 15	2,826,160 75	1,045,232 40
Additional Water Supply, City of New York	51,434 18	7,109 57	44,324 61	.....	44,324 61
Revenue Bond Fund, Purchase, etc., of Westchester Water Company Plant, etc	4,224 81	4,224 79	02	25 00	† 24 98
Water Meter Fund No. 2	42,087 50	.....	42,087 50	.....	.....
Water Mains, Southern Boulevard, The Bronx, etc	17,000 00	989 10	16,010 90	11,033 40	4,977 50
Drinking Fountains, The Bronx, etc., Erection of	650 00	.....	650 00	.....	.....
Revenue Bond Fund, Salaries of Pipe Caulkers, etc	13,255 00	13,255 00	.....	.....	.....
Revenue Bond Fund, Emergency Force, etc	42,560 00	34,318 89	8,241 11	.....	.....
Total *disbursements*, Bond Accounts	.....	$1,189,205 77			
Total expended, year 1905	.....	$1,972,723 05			

* Does not include accrued taxes on City property along the watershed.
† Deficit.

FINANCIAL.

Receipts and Expenditures.

BOROUGH OF QUEENS.

Receipts.

Regular annual frontage rates and penalties	$55,875 73	
Meter charges	103,343 09	
Miscellaneous charges	5,461 57	
Total credit of various funds, Borough of Queens		$164,680 39

Expenditures.

Appropriations for 1905.

Salaries, Office of Deputy Commissioner—		
Appropriation with transfers	$19,740 00	
Expended, per voucher, 1905	19,612 21	
Balance, January 1, 1906		$127 79
Salaries, Pumping Stations—		
Appropriation with transfers	$34,497 50	
Expended, per voucher, 1905	34,373 45	
Balance, January 1, 1906		$124 05
Pumping Stations, Fuel and Supplies—		
Appropriation with transfers	$27,775 00	
Expended, per Voucher, 1905:		
Contracts $17,339 57		
Sundries 6,376 05		
	23,715 62	
Cash balance, January 1, 1906	**$4,059 38**	

Pumping Stations, Fuel and Supplies—			
Outstanding Liabilities, estimated:			
Contracts	$2,763 00		
Sundries	2,324 00		
		5,087 00	
Estimated deficit, January 1, 1906			$1,027 62

This deficit is partly owing to an increase in the coal contract agreed upon by the Comptroller. A transfer of additional funds must be made to meet the bills accruing.

Maintenance and Repairs to Water Pipes, etc.—			
Appropriation for 1905		$30,000 00	
Expended, per Voucher, 1905:			
Salaries	$22,914 06		
Contracts	1,347 90		
Sundries	6,732 82		
		30,994 78	
Deficit, January 1, 1906		$994 78	
Outstanding liabilities (estimated)		1,800 00	
Estimated deficit, January 1, 1906			$2,794 78

This deficit must be met by a transfer of additional funds to this account, as heretofore recommended in previous quarterly reports.

Supplying Water to Long Island City—			
Appropriation for 1905		$125,000 00	
Expended, per voucher, 1905		115,795 86	
Cash balance, January 1, 1906		$9,204 14	
Outstanding liabilities (estimated)		100 00	
Estimated balance, January 1, 1906			$9,104 14

This balance will not, on the basis of previous monthly bills, be quite sufficient to meet the December bills for water. A small sum will no doubt be sufficient to meet them in full.

Rental of Fire Hydrants—
Appropriation for 1905 ..... $50,000 00
Expended, per voucher, 1905 ..... 23,647 70
Balance, January 1, 1906 ..... $26,352 30

When the second semi-annual bills are rendered, there should be a small balance to the credit of this account.

Appropriations for 1904.

Salaries, Office of Deputy Commissioner—
Balance, January 1, 1905 ..... $1,057 79
Expended, per voucher, 1905 ....
Balance, January 1, 1906 ..... $1,057 79

Salaries, Pumping Stations—
Balance, January 1, 1905 ..... $24 84
Expended, per voucher, 1905 ....
Balance, January 1, 1906 ..... $24 84

Pumping Stations, Fuel and Supplies—
Balance, January 1, 1905 ..... $6,127 71
Expended, per Voucher, 1905:
Contracts $3,917 27
Sundries 1,829 00
5,746 27
Balance, January 1, 1906 ..... $381 44
Outstanding liabilities (estimated) 62 00
Estimated balance, January 1, 1906 ..... $319 44

Maintenance and Repair of Water Pipes, Etc.—
Balance, January 1, 1905 ..... $3,162 67
Expended, per voucher, 1905:
Salaries $163 25
Sundries 2,492 24
2,655 49
Balance, January 1, 1906 ..... $507 18
Outstanding liabilities (estimated) 370 00
Estimated balance January 1, 1906 ..... $137 18

Supplying Water to Long Island City—
Balance, January 1, 1905 ..... $16,758 96
Expended, per voucher, 1905 ..... 12,099 88
Balance, January 1, 1906 ..... $4,659 08
Outstanding liabilities (estimated) 300 00
Estimated balance, January 1, 1906 ..... $4,359 08

Rental of Fire Hydrants—
Balance, January 1, 1905 ..... $23,710 27
Expended, per voucher, 1905 ..... 22,267 82
Balance, January 1, 1906 ..... $1,442 45

Appropriations for 1903.

Pumping Stations, Fuel and Supplies—
Balance, January 1, 1905 ..... $604 19
Expended, per voucher, 1905 ..... 136 51
Balance, January 1, 1906 ..... $467 68

Maintenance and Repair of Water Pipes, Etc.—
Balance, January 1, 1905 ..... $6,410 76
Expended, per voucher, 1905 ..... 78 65
Balance, January 1, 1906 ..... $6,332 11
Outstanding liabilities (estimated) 1,127 00
Estimated balance, January 1, 1906 ..... $5,205 11

Supplying Water to Long Island City—
Balance, January 1, 1905 ..... $1,064 18
Expended, per voucher, 1905 ....
Balance, January 1, 1906 ..... $1,064 18

Rental of Fire Hydrants—
Balance, January 1, 1905 ..... $3,153 60
Expended, per voucher, 1905 ....
Balance, January 1, 1906 ..... $3,153 60

Bond Accounts.

Water Fund, Borough of Queens—
Available during 1905 ..... $940,611 74
Expended, per voucher, 1905:
Salaries $25,863 59
Contracts 91,325 65
Sundries 13,817 57
131,006 81
Cash balance, January 1, 1906 ..... $809,604 93
Outstanding Liabilities (Estimated):
Contracts $60,245 00
Sundries 2,915 00
63,160 00
Estimated balance, January 1, 1906 ..... $746,444 93

Revenue Bond Fund for Laying Mains, Borough of Queens—
Available during 1905 ..... $1,606 02
Expended, per voucher, 1905 ..... 1,458 02
Balance, January 1, 1906 ..... $148 00

SUMMARY.

BOROUGH OF QUEENS.

	Funds Available During 1905.	Expended in 1905.	Balance Available January 1, 1906.	Estimated Outstanding Liabilities Not Including Salaries, January 1, 1906.	Estimated Balance January 1, 1906.
Appropriation Accounts.					
Salaries, Office of Deputy Commissioner—					
Budget, 1905	$19,740 00	$19,612 21	$127 79	.....	.....
Budget, 1904	1,057 79	.....	1,057 79	.....	.....
Salaries, Pumping Station—					
Budget, 1905	34,497 50	34,373 45	124 05	.....	.....
Budget, 1904	24 84	.....	24 84	.....	.....
Pumping Stations, Fuel and Supplies—					
Budget, 1905	27,775 00	23,715 62	4,059 38	$5,087 00	*$1,027 62
Budget, 1904	6,127 17	5,746 27	381 44	62 00	319 44
Budget, 1903	604 19	136 51	467 68	.....	467 68
Maintenance and Repair, Pipes, etc.—					
Budget, 1905	30,000 00	30,994 78	*994 78	1,800 00	*2,794 78
Budget, 1904	3,162 67	2,655 49	507 18	370 00	137 18
Budget, 1903	6,410 76	78 65	6,332 11	1,127 00	5,205 11
Supplying Water to Long Island City—					
Budget, 1905	125,000 00	115,795 86	9,204 14	100 00	9,104 14
Budget, 1904	16,758 96	12,099 88	4,659 08	300 00	4,359 08
Budget, 1903	1,064 18	.....	1,064 18	.....	1,064 18
Rentals of Fire Hydrants—					
Budget, 1905	50,000 00	23,647 70	26,352 30	.....	26,352 30
Budget, 1904	23,710 27	22,267 82	1,442 45	.....	1,442 45
Budget, 1903	3,153 60	.....	3,153 60	.....	3,153 60
Total disbursements account appropriations	.....	$291,124 24			
Bond Accounts.					
Water Fund	940,611 74	$131,006 81	809,604 93	63,160 00	746,444 90
Revenue Bond Fund for laying mains	1,606 02	1,458 02	148 00	.....	148 00
Total disbursements, Bond Accounts	.....	132 464 83	.....	.....	.....
Total expended during 1905	.....	$423,589 07	.....	.....	.....

*Deficit.

FINANCIAL.

Receipts and Expenditures.

BOROUGH OF RICHMOND.

Receipts.

Regular annual frontage rates and penalties	$409 61	
Meter charges	5,069 44	
Miscellaneous charges	120 07	
Total, credit of Fund, Water Rents, Village of Tottenville, Borough of Richmond		$5,599 12

Expenditures.

Appropriations for 1905.

Salaries, Office of Deputy Commissioner—		
Appropriation with transfers	$6,650 00	
Expended, per voucher, 1905	6,624 03	
Balance, January 1, 1906		$25 97
Pumping Stations, Salaries and Supplies—		
Appropriation with transfers	$13,100 00	
Expended, per Voucher, 1905:		
Salaries	$5,110 35	
Contracts	2,677 50	
Sundries	2,957 33	
	10,745 18	
Cash balance, January 1, 1906	$2,354 82	
Outstanding Liabilities (Estimated):		
Contracts	$900 00	
Sundries	480 00	
	1,380 00	
Estimated balance, January 1, 1906		$974 82

This balance should be sufficient to meet all demands.

Rental of Fire Hydrants—		
Appropriation with transfers	$29,052 50	
Expended, per voucher, 1905	180 00	
Balance, January 1, 1906		$28,872 50

All vouchers since January, 1905, have been held in abeyance awaiting adjustment as to price per hydrant, and after such arrangements there will not remain much, if any, balance.

Appropriations for 1904.

Pumping Stations, Salaries and Supplies—		
Balance, January 1, 1905	$996 64	
Expended, per Voucher, 1905:		
Salaries	$15 75	
Contracts	372 40	
Sundries	499 55	
	887 70	
Balance, January 1, 1906		$108 94
Rentals of Fire Hydrants—		
Balance, January 1, 1905	$14,300 00	
Expended, per voucher, 1905	.....	
Balance, January 1, 1906		$14,300 00

As in 1905 account, the vouchers are held in abeyance awaiting adjustment as to price per hydrant.

Appropriations for 1903.

Pumping Stations, Salaries and Supplies—		
Balance, January 1, 1905	$730 99	
Expended, per voucher, 1905	.....	
Balance, January 1, 1906		$730 99
Rentals of Fire Hydrants—		
Balance, January 1, 1905	$14,494 41	
Expended, per voucher, 1905	.....	
Balance, January 1, 1906		$14,494 41

As in 1905 and 1904 accounts, the vouchers have been held in abeyance awaiting adjustment as to price per hydrant.

Bond Accounts.

Water Fund, Borough of Richmond—			
Available January 1, 1905	$27,411 41		
Authorized by Board of Estimate and Apportionment, May 26, 1905	1,500,000 00	$1,527,411 41	
Expended, per Voucher, 1905:			
Salaries	$904 95		
Contracts	2,814 81		
Sundries	4,194 58		
		7,914 34	
Cash balance, January 1, 1906		$1,519,497 07	
Outstanding liabilities (estimated)		1,447 00	
Estimated balance, January 1, 1906			$1,518,050 07
Revenue Bond Fund, Village of Tottenville—			
Available January 1, 1905		$1,138 19	
Expended, per voucher, 1905		.....	
Balance, January 1, 1906			$1,138 19

SUMMARY.

BOROUGH OF RICHMOND.

	Funds Available During 1905.	Expended in 1905.	Balance January 1, 1906.	Estimated Outstanding Liabilities Not Including Salaries, January 1, 1906.	Estimated Balance January 1, 1906.
Appropriation Accounts.					
Salaries, Office of Deputy Commissioner—					
Budget 1905	$6,650 00	$6,624 03	$25 97	.....	.....
Pumping Stations, Salaries and Supplies—					
Budget 1905	13,100 00	10,745 18	2,354 82	$1,380 00	$974 82
Budget 1904	996 64	887 70	108 94	.....	108 94
Budget 1903	730 99	.....	730 99	.....	730 99
Rentals of Fire Hydrants—					
Budget 1905	29,052 50	180 00	28,872 50	*.....	.....
Budget 1904	14,300 00	.....	14,300 00	*.....	.....
Budget 1903	14,494 41	.....	14,494 41	*.....	.....
Total disbursements account of appropriations	.....	$18,436 91			
Bond Accounts.					
Water Fund, Borough of Richmond	1,527,411 41	$7,914 34	1,519,497 07	1,447 00	1,518,050 07
Revenue Bond Fund, Village of Tottenville	1,138 19	.....	1,138 19	.....	1,138 19
Total disbursements for Bond Accounts	.....	$7,914 34			
Total expended during 1905	.....	$26,351 25			

* Awaiting adjustment as to price.

BOROUGHS OF MANHATTAN, THE BRONX, QUEENS AND RICHMOND.

Summary of Balances, as of January 1, 1906, Estimated from Outstanding Orders and Requisitions.

Title of Appropriation Accounts.	Year.	Amounts Transferable From.	Amounts to Be Transferred To.
Boroughs of Manhattan and The Bronx.			
Salaries, Bureau of Chief Engineer	1905	.....	$37 39
Salaries, Bureau of Chief Engineer	1904	$354 09	.....
Salaries, Croton Water System	1905	85 09	.....
Salaries, Croton Water System	1904	1,505 40	.....
Salaries, Bronx River Works	1905	.....	.....
Maintenance of Croton Water System	1905	.....	54,525 16
Maintenance of Croton Water System	1904	.....	28,400 00
Maintenance of Croton Water System	1903	.....	5,500 00
Bronx River Works, Maintenance and Repairs	1905	.....	10,173 42
Bronx River Works, Maintenance and Repairs	1904	.....	3,200 00
Bronx River Works, Maintenance and Repairs	1903	7,400 00	.....
Repairing and Renewal of Pipes, Stop Cocks, etc	1905	.....	6,996 57
Repairing and Renewal of Pipes, Stop Cocks, etc	1904	3,369 06	.....
Repairing and Renewal of Pipes, Stop Cocks, etc	1903	18,196 38	.....
Repairing and Renewal of Pipes, Stop Cocks, etc	1902	5,561 28	.....
Public Drinking Hydrants	1905	630 17	.....
Public Drinking Hydrants	1904	693 82	.....
Public Drinking Hydrants	1903	665 05	.....

Title of Appropriation Accounts.	Year.	Amounts Transferable From.	Amounts to Be Transferred To.
Water Supply, Twenty-fourth Ward	1905	127 64	.....
Water Supply, Twenty-fourth Ward	1904	2,159 53	.....
Additional Fire Hydrants	1902	2,198 11	.....
Aqueduct, Maintenance and Repairs	1900	2,123 21	.....
Borough of Queens.			
Salaries, Office of Deputy Commissioner	1905	127 79	.....
Salaries, Office of Deputy Commissioner	1904	1,057 79	.....
Salaries, Pumping Stations	1905	124 05	.....
Salaries, Pumping Stations	1904	24 84	.....
Pumping Stations, Fuel and Supplies	1905	.....	1,027 62
Pumping Stations, Fuel and Supplies	1904	319 44	.....
Pumping Stations, Fuel and Supplies	1903	467 68	.....
Maintenance and Repair of Pipes, etc	1905	.....	2,794 78
Maintenance and Repair of Pipes, etc	1904	137 18	.....
Maintenance and Repair of Pipes, etc	1903	5,205 11	.....
Supplying Water to Long Island City	1905	.....	1,000 00
Supplying Water to Long Island City	1904	4,359 08	.....
Supplying Water to Long Island City	1903	1,064 18	.....
Rentals of Fire Hydrants	1905	.....	.....
Rentals of Fire Hydrants	1904	1,442 45	.....
Rentals of Fire Hydrants	1903	3,153 60	.....
Borough of Richmond.			
Salaries, Office of Deputy Commissioner	1905	25 97	.....
Pumping Stations, Salaries and Supplies	1905	974 82	.....
Pumping Stations, Salaries and Supplies	1904	108 94	.....
Pumping Stations, Salaries and Supplies	1903	730 99	.....
Rentals of Fire Hydrants	1905	*.....	.....
Rentals of Fire Hydrants	1904	*.....	.....
Rentals of Fire Hydrants	1903	*.....	.....

* Awaiting adjustment as to price.

TABLE No. 1.

Average Daily Consumption, Manhattan and The Bronx.

Month.	New Aqueduct.	Old Aqueduct.	Bronx and Byram.	Yonkers.	Total Manhattan and The Bronx.
	Million Gallons.	Million Gallons.	Million Gallons.	Million Gallons.	Million Gallons.
January	285.2	8.7	18.0	1.1	313.0
February	284.5	14.0	18.0	1.1	317.6
March	284.6	16.0	18.0	1.1	319.7
April	278.4	15.7	19.0	...	313.1
May	271.1	22.9	19.0	...	313.0
June	274.1	19.9	19.0	...	313.0
July	283.4	20.6	14.0	...	318.0
August	277.0	20.6	14.0	...	311.6
September	275.6	21.0	17.0	...	313.6
October	280.7	21.0	18.0	...	319.7
November	280.8	20.7	19.0	...	320.5
December	281.0	21.4	19.0	...	321.4
Average	279.7	18.5	17.7	...	316.3

In the reports for the first three quarters of the present year, as well as in this report, the calculations of consumption are based on a curve plotted from the average gaugings in the past up to date and afford therefore the most reliable information at present obtainable.

The tabulation of the storage at the different reservoirs has this year been given for the first time and in such form that it can be readily followed and checked through the successive quarterly reports.

The methods hitherto adopted to determine the amount of water flowing through The Bronx pipe line are unsatisfactory. Steps will be taken as soon as possible to devise a more reliable means of computation.

TABLE No. 2.

Average Daily Consumption of Croton Water in Million Gallons.

	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
January	175	206	204	218	248	254	262	274	283	298
February	177	207	206	233	251	252	261	271	293	303
March	173	202	202	226	233	251	256	267	282	301
April	161	193	197	218	236	234	258	264	277	298
May	169	190	195	218	239	238	255	265	279	296
June	190	193	205	228	250	247	257	263	290	298
July	192	197	209	224	254	264	258	272	292	306
August	198	194	213	232	259	267	263	267	284	302
September	198	201	223	227	260	265	270	271	290	301
October	197	196	217	230	255	266	264	265	288	304
November	196	190	210	230	251	260	268	264	285	305
December	204	193	207	224	251	262	274	270	295	306

Total consumption of Croton water for year 1905, 110,048 million gallons.
Total water wasted at Croton Dam for year 1905, 35,027 million gallons.

TABLE No. 3.

Average Daily Consumption of Croton Water in New York for Each Month, from 1900 in Million Gallons per 24 Hours.

Months.	1900.	1901.	1902.	1903.	1904.	1905.
January	248	254	262	274	283	298
February	251	252	261	271	293	303
March	233	251	256	267	282	301
April	236	234	258	264	277	298
May	239	238	255	265	279	296
June	250	247	257	263	290	298
July	254	264	258	272	292	306
August	259	267	263	267	284	302
September	260	265	270	271	290	301
October	255	266	264	265	288	304
November	251	260	268	264	285	305
December	251	262	274	270	295	306
Average for year	248.9	255.1	262.2	267.8	286.5	301.5

TABLE No. 4 (See Diagram No. 1).

Showing Estimated Population and Average Daily Supply of Water Required for the Boroughs of Manhattan and The Bronx, from 1905 to 1915, Both Inclusive.

Year.	Population.	Consumption per Capita. Gallons.	Average Daily Consumption. Gallons.
1905	2,390,000	133	319,000,000
1906	2,464,000	135	333,000,000
1907	2,541,000	137	348,000,000
1908	2,620,000	139	364,000,000
1909	2,703,000	141	381,000,000
1910	2,788,000	143	398,000,000
1911	2,876,000	195	417,000,000
1912	2,967,000	147	436,000,000
1913	3,062,000	149	456,000,000
1914	3,160,000	151	477,000,000
1915	3,262,000	153	499,000,000

The figures in the above table are shown graphically in Diagram No. 1, which gives also the fluctuations in the storage for the last ten years, as well as the ranges of temperature. The estimates of population have been based on the Federal census of 1900 and State census of 1905, as well as the records and estimates of the Health Department figured to July 1 of each year.

The increase in consumption has been estimated to be proportional to that on population with a yearly addition of two gallons per day to the per capita consumption. If we take the yield of the Croton watershed, when fully developed, plus that from The Bronx, at say 345,000,000 gallons per day, it will be seen that the present sources will suffice for Manhattan and The Bronx only through the year 1907, on the basis of a minimum safe supply, although, of course, a larger quantity will be available if we have abundant rainfall. The imperative need of making immediate provision for additional sources of supply that may be available as soon as possible and certainly long before the expiration of the ten years which have been fixed as the time required to bring the water from up the State, is therefore obvious. It may be practicable for the Board of Water Supply to deliver into the Croton watershed some of the supply from up the State in advance of the completion of the works projected by them on the east side of the Hudson. Aside from the results that may, perhaps, be thus obtained, attention should be called, however, to the supply from Dutchess County and from Suffolk County.

As the development of the Dutchess County watershed has been thoroughly discussed in published reports, little comment is needed here beyond the suggestion that, if legal authority is obtained, it may be practicable, as an emergency measure, to pump some of the supply from that County into the Croton watershed for delivery through the present aqueduct.

In regard to Suffolk County, it may be safely asserted that no other source of supply presents, under existing conditions, the same advantages as regards the early availability of the supply. From Suffolk County we can obtain a supply which may be safely estimated at about 180,000,000 gallons per day. An allowance of 60,000,000 gallons daily to Brooklyn would suffice for the needs of that borough beyond 1915, leaving the other 120,000,000 gallons for Manhattan and The Bronx. For the relief of Brooklyn 25,000,000 gallons per day could be readily obtained in about one year after the commencement of work at a cost of about $1,000,000, not including a new conduit or high pressure engines, and, by the methods of construction adopted in Brooklyn, the estimated total supply of about 180,000,000 gallons per day could be developed within four years, assuming that all the water were to be delivered at the Ridgewood reservoirs.

Without much further investigation, close estimates cannot, obviously, be given, but for present purposes it may be assumed that the 60,000,000 gallons per day to be delivered to Brooklyn would cost say $10,000,000, and the 120,000,000 gallons for the supply of Manhattan and The Bronx would cost say $37,000,000. The disproportion in the cost between the respective quantities allotted to Brooklyn and Manhattan and The Bronx is thus explained:

First—For the Brooklyn supply there would be no need to provide much of the land required for the conduits.

Second—Brooklyn would naturally take the water from the first section of Suffolk County developed and adjoining the Nassau County works.

Third—The cost of piping from Ridgewood to Central Park in Manhattan and tunneling under the East river, does not enter into the Brooklyn estimates.

The above figures represent in all cases the cost of supplying the amounts given, i. e., a total of 180,000,000 gallons a day. Good engineering practice would require designing the works for a larger probable yield, with a consequent increase in cost.

TABLE No. 5.

Rainfall, Croton Watershed, 1905.

Month.	Boyds Corners.	Carmel Reservoir.	Middle Branch.	East Branch.	Amawalk.	Titicus.	Old Croton Dam.	Average.
January	6.54	6.22	6.53	7.34	6.22	7.28	7.37	6.79
February	1.76	1.78	1.84	1.58	1.58	1.70	1.67	1.70
March	3.98	4.51	4.27	4.46	4.55	3.77	3.99	4.22
April	2.74	3.18	3.22	3.41	3.28	3.62	2.70	3.16
May	1.05	0.97	1.08	1.06	1.64	1.39	0.55	1.10
June	4.87	6.10	6.78	6.40	7.20	7.28	5.96	6.37
July	3.73	3.79	2.62	2.31	3.02	3.28	3.83	3.23
August	5.09	6.38	5.43	6.37	6.34	6.49	6.41	6.07
September	5.62	5.03	3.51	3.55	5.17	5.34	4.37	4.66
October	3.25	3.12	3.14	3.19	3.54	3.82	3.27	3.33
November	2.63	2.41	2.33	2.24	2.29	2.48	2.14	2.36
December	4.04	3.96	3.57	3.33	4.04	4.03	2.81	3.68
Total for year..	45.30	47.45	44.32	45.24	48.87	50.48	45.07	46.67

The total rainfall for year amounted to 46.67 inches, of which 20.84 inches, or 45 per cent., became available as runoff of the Croton river.

Kensico Rainfall, 1905.

January	7.18
February	2.42
March	4.60
April	3.16
May	.73
June	4.59
July	7.49
August	5.04
September	5.31
October	3.82
November	2.64
December	4.53

TABLE No. 6.

Storage on Croton Watershed in Million Gallons.

Name of Reservoir.	Total Contents When Full to Crest of Spillway.	September 30, 1905. Distance Below Spillway in Feet.	September 30, 1905. Storage on Hand in Million Gallons.	December 31, 1905. Distance Below Spillway in Feet.	December 31, 1905. Storage on Hand in Million Gallons.	Storage Drawn During Quarter Ending December 31, 1905.	Additional Water Stored During Quarter Ending September 30, 1905.
Boyds Corners	2,727	10.00	1,882	19.25	1,236	646	....
West Branch	10,070	16.58	4,760	22.33	3,219	1,541	....
Middle Branch	4,005	5.35	3,284	25.83	1,102	2,182	....
East Branch	5,243	18.50	2,471	20.00	2,304	167	....
Bog Brook	4,400	18.50	2,203	20.00	2,047	156	....
Titicus	7,167	10.50	5,054	21.33	3,290	1,764	....
Amawalk	6,692	12.08	4,638	25.12	2,858	1,780	....
Old Croton Lake	2,000	6.29	1,464	3.04	1,732	....	268
Mahopac Lake	575	0.46	522	1.00	460	62	....
Kirk Lake	565	1.75	509	9.17	274	235	....
Gleneida Lake	165	0.08	163	1.25	123	40	....
Gilead Lake	380	0.75	362	0.92	358	4	....
Barrett's Pond	170	1.83	139	2.33	130	9	....
White's Pond	200	3.00	113	2.58	125	....	12
Totals	*44,359	....	27,564	....	19,258	8,586	280
Net amount of storage drawn						8,306	....

* See note of November 8, following.

Storage on The Bronx and Byram Watershed in Million Gallons.

Name of Reservoir.	Total Contents When Full to Crest of Spillway.	September 30, 1905. Distance Below Spillway in Feet.	September 30, 1905. Storage on Hand in Million Gallons.	December 31, 1905. Distance Below Spillway in Feet.	December 31, 1905. Storage on Hand in Million Gallons.	Storage Drawn During Quarter Ending December 31, 1905.	Additional Water Stored During Quarter Ending September 30, 1905.
Kensico Reservoir	*1,797	3.04	1,392	1.25	1,527	....	135
Byram Lake	844	0.67	824	1.00	790	34	....
Rye Ponds	*1,440	1.17	1,215	0.54	1,279	....	64
Wampus Lake	60	....	60	....	60	....	....
Totals	4,141	....	3,491	....	3,656	34	199
Total net amount of storage added							165

* With flashboards on crest of spillway.

January 7 to 25, 1905, water wasted over old Croton dam amounting to 10,544,000,000 gallons.

January 28—The blowoff gates in new Croton dam were closed by Aqueduct Commission Engineers and the water behind the dam rose until March 21, 1905, when it had reached a depth of 75 feet, at elevation 128, when the blowoff gates were opened, wasting for remainder of month at rate of 732,000,000 gallons daily.

March 21 to 31—Water wasted through 48-inch blowoff gates, new Croton dam, three gates being opened with head varying from 28 to 69 feet = 7,590,000,000 gallons.

April 1 to 15—10,305,000,000 gallons wasted through blowoff gates.

May and June—1,334,000,000 gallons wasted through gates.

November 8—"The total contents, when full to crest of spillway," was increased by 29,533,000,000 gallons, to a total of 73,892,000,000 gallons by the final closing of the blowoff gates in new Croton dam, and water accumulated up to elevation 88 amounting to about 700,000,000 gallons, on December 31, 1905.

November 7 to 15—193,000,000 gallons wasted into Jerome Park Reservoir through old aqueduct, as a frost protection to concrete floor.

March 23 to April 27—Water wasted over Kensico dam to the amount of 1,409,000,000 gallons.

November 29—Reservoir had smallest amount of water on storage during quarter: 16,720,000,000 gallons for Croton system and 3,067,000,000 gallons for Bronx and Byram; total, 19,787,000,000 gallons, equivalent to a supply for sixty-two days.

April 6, 1905—Total capacity of East Branch Reservoir increased to 5,243,000,000 gallons and Bog Brook Reservoir to 4,400,000,000 gallons by the raising of the spillway at East Branch 2 feet to elevation 417.

TABLE No. 7.

Showing flow through the aqueducts and over the dam (when there has been waste), no correction being made for changes in the contents of the storage reservoirs. Quantities expressed in million gallons per twenty-four hours.

Months.	1900.	1901.	1902.	1903.	1904.	1905.
January	253	248	814	662	495	691
February	922	252	692	776	565	*233
March	863	498	1,783	1,138	1,027	*622
April	352	1,051	657	667	567	*640
May	415	755	352	263	297	*274
June	245	373	254	498	299	294
July	253	297	253	355	292	304
August	255	744	260	268	285	298
September	255	445	267	352	362	297
October	255	507	296	957	286	302
November	256	278	265	399	280	308
December	281	850	706	499	291	302
Average for year	380.5	527.0	550.8	568.8	420.3	381.6

* Calculated from observed flows at New Croton Dam.

Total drainage area, 338.8 square miles.

Water Surface Exposed to Evaporation.

	Per Cent.
5.8 square miles, 1868 to 1873	1.73
6.2 square miles, 1873 to October, 1878	1.83
6.9 square miles, 1878 to 1891	2.03
8.4 square miles, 1891 to 1893	2.48
9.5 square miles, 1893 to 1895	2.82
11.0 square miles, 1895 to 1897	3.28
12.0 square miles, 1897 to December 31, 1905	3.56

TABLE No. 8.

Showing flow through the aqueducts and over the dam (when there has been waste), corrections being made for the raising or lowering of the reservoirs. Quantities expressed in million gallons per twenty-four hours.

Months.	1900.	1901.	1902.	1903.	1904.	1905.
January	336	232	719	690	438	832
February	1,370	101	618	780	574	*248
March	1,045	979	1,872	1,148	1,036	*824
April	378	1,484	630	662	625	*682
May	479	811	342	118	310	*175
June	138	315	161	646	228	228
July	86	270	140	298	162	72
August	23	822	109	289	232	99

Months.	1900.	1901.	1902.	1903.	1904.	1905.
September	60	422	136	355	499	257
October	105	509	459	952	302	141
November	259	243	279	335	270	118
December	365	894	1,049	516	209	226
Average for year	380.9	593.9	544.9	564.7	406.1	327.5

* Calculated from observed flows at New Croton Dam.

Computed from observed flow by deducting the quantity corresponding to lowering of storage reservoirs or adding the quantity taken to refill, without allowance for evaporation loss from storage reservoirs.

TABLE No. 9.

Waste of Water Over Old Croton Dam in Million Gallons. Estimate of Department of Water Supply.

Months.	1900.	1901.	1902.	1903.	1904.	1905.
January	174	.....	17,228	12,224	6,640	12,210
February	18,838	.....	12,140	14,152	7,969	*.....
March	19,654	7,806	47,420	27,118	23,201	*7,590
April	3,539	24,367	12,451	12,247	8,837	*10,305
May	5,599	16,111	3,028	.....	*662	
June	.....	3,973	26	7,135	424	
July	.....	1,056	.....	2,688	.....	
August	.....	15,019	.....	90	135	4,922
September	.....	5,353	.....	2,551	2,278	
October	.....	7,607	1,053	21,540	29	
November	287	662	17	4,156	.....	.....
December	969	18,270	13,481	7,152	.....	.....
Total for year	49,060	100,224	106,844	111,053	50,175	35,027

* Water over old Croton Dam wasted into New Lake and there wasted through blow-off gates. June 1, 1905, computations changed back to basis of old Croton Lake and 4,922 million gallons then on storage in New Lake wasted.

TABLE No. 10.

Rainfall on Croton Watershed.

Total inches depth of rain and melted snow collected during month. From records of Department of Water Supply.

1900.

Month.	Boyds Corners.	Carmel Reservoir.	Middle Branch.	East Branch.	Amawalk.	Titicus.	Old Croton Dam.	Average.
January	4.18	4.06	3.73	2.90	....	....	3.90	3.76
February	7.97	8.39	7.77	6.49	....	....	7.70	7.66
March	5.03	5.44	4.52	4.88	....	....	3.97	4.77
April	2.21	2.13	1.87	1.97	....	....	1.95	2.03
May	6.40	6.51	6.45	6.55	....	....	3.46	5.87
June	2.19	2.60	2.15	2.71	....	....	2.55	2.44
July	4.28	3.87	3.88	3.18	....	....	4.16	3.87
August	1.75	2.30	3.18	2.23	....	....	2.43	2.38
September	3.27	3.54	3.52	3.70	....	....	2.79	3.36
October	4.73	3.83	4.50	3.47	....	....	4.32	4.17
November	4.91	5.26	5.98	5.40	....	....	5.24	5.36
December	2.58	2.77	2.47	2.70	....	....	2.08	2.52
Total for year	49.50	50.70	50.02	46.18	....	....	44.55	48.19

1901.

Month.	Boyds Corners.	Carmel Reservoir.	Middle Branch.	East Branch.	Amawalk.	Titicus.	Old Croton Dam.	Average.
January	1.69	1.65	1.78	1.45	....	....	1.60	1.63
February	0.94	0.81	0.79	1.10	....	....	0.55	0.84
March	7.54	7.89	6.94	7.18	....	....	6.37	7.18
April	8.48	7.93	7.61	7.95	....	....	8.97	8.19
May	7.91	7.49	6.78	6.25	....	....	6.62	7.01
June	1.46	1.33	2.09	1.05	....	....	1.47	1.48
July	7.08	8.52	8.80	12.39	....	....	4.97	8.35
August	8.21	7.74	7.98	8.40	....	....	12.80	9.03
September	4.72	5.81	5.88	6.30	....	....	4.75	5.49
October	3.26	4.15	5.21	4.35	....	....	2.75	3.94
November	1.99	2.08	1.65	1.90	....	....	1.38	1.80
December	9.53	9.46	8.69	8.65	....	....	7.74	8.81
Total for year	62.81	64.86	64.20	66.97	....	....	59.97	63.75

1902.

Month.	Boyds Corners.	Carmel Reservoir.	Middle Branch.	East Branch.	Amawalk.	Titicus.	Old Croton Dam.	Average.
January	2.77	2.87	3.12	2.75	....	....	3.06	2.91
February	4.67	5.13	3.60	2.50	....	....	4.28	4.04
March	7.49	5.93	7.01	5.70	....	....	5.96	6.42
April	4.57	4.66	4.68	4.50	....	....	3.68	4.42
May	3.31	3.49	3.30	3.30	....	....	4.47	3.57
June	4.68	4.98	5.33	4.35	....	....	4.12	4.69
July	3.77	5.21	4.37	3.95	....	....	4.16	4.29
August	2.91	2.76	3.23	1.95	....	....	1.73	2.52
September	6.07	6.97	6.73	5.65	....	....	6.47	6.34
October	5.95	6.32	6.55	6.40	....	....	5.92	6.23
November	0.91	0.89	1.25	0.35	....	....	1.10	0.90
December	7.39	7.30	7.34	7.16	....	....	6.56	7.15
Total for year	54.49	56.33	56.51	48.56	....	....	51.51	53.48

1903.

Month.	Boyds Corners.	Carmel Reservoir.	Middle Branch.	East Branch.	Amawalk.	Titicus.	Old Croton Dam.	Average.
January	4.52	4.81	4.63	4.15	3.80	4.83	3.65	4.34
February	5.73	5.55	4.96	4.68	3.79	5.72	3.77	4.88
March	6.30	5.90	5.19	5.22	4.80	6.88	4.59	5.56
April	2.68	2.63	2.69	2.75	2.37	4.24	3.46	2.97
May	1.25	1.80	1.16	1.02	0.93	0.60	0.57	1.05
June	11.81	12.70	11.35	10.55	9.61	13.57	9.22	11.26
July	3.54	2.44	2.45	1.95	3.39	3.46	3.07	2.90
August	9.08	8.29	6.88	7.59	7.72	6.80	7.80	7.74
September	2.61	2.69	2.67	3.26	2.80	4.04	3.17	3.03
October	8.59	8.45	6.90	7.36	8.30	7.78	7.61	7.86
November	2.48	3.35	2.89	2.65	2.76	2.81	2.44	2.76
December	4.67	4.98	3.68	4.07	4.26	5.61	4.09	4.48
Total for year	63.26	63.59	55.45	55.25	54.53	66.34	53.44	58.83

1904.

Month.	Boyds Corners.	Carmel Reservoir.	Middle Branch.	East Branch.	Amawalk.	Titicus.	Old Croton Dam.	Average.
January	4.52	3.82	3.73	3.75	3.63	5.37	3.25	4.01
February	3.22	3.39	3.10	3.48	3.32	3.51	2.81	3.26
March	3.77	4.09	3.83	3.64	3.45	4.67	2.29	3.68
April	4.23	4.78	4.03	4.18	4.47	5.35	3.39	4.35
May	4.99	3.79	4.45	4.13	4.04	4.24	3.08	4.10
June	2.40	2.44	2.25	2.47	2.79	2.59	1.62	2.37
July	6.73	6.11	5.32	5.24	6.40	4.78	4.00	5.51
August	5.16	6.50	6.43	6.15	9.44	7.38	8.11	7.02
Sept	7.21	7.73	4.64	7.54	7.22	7.17	7.56	7.01
October	4.00	3.64	3.63	3.70	3.61	3.87	3.82	3.75
November	1.78	2.02	1.89	2.03	2.35	2.65	2.63	2.19
December	3.48	3.45	3.37	3.50	2.90	3.47	4.00	3.45
Total for year	51.49	51.76	46.69	49.81	53.62	55.03	46.56	50.70

1905.

Month.	Boyds Corners.	Carmel Reservoir.	Middle Branch.	East Branch.	Amawalk.	Titicus.	Old Croton Dam.	Average.
January	6.54	6.22	6.53	7.34	6.22	7.28	7.37	6.79
February	1.76	1.78	1.84	1.58	1.58	1.70	1.67	1.70
March	3.98	4.51	4.27	4.46	4.55	3.77	3.99	4.22
April	2.74	3.18	3.22	3.41	3.28	3.62	2.70	3.16
May	1.05	0.97	1.08	1.06	1.64	1.39	0.55	1.10
June	4.87	6.10	6.78	6.40	7.20	7.28	5.96	6.37
July	3.73	3.79	2.62	2.31	3.02	3.28	3.83	3.23
August	5.09	6.38	5.43	6.37	6.34	6.49	6.41	6.07
September	5.62	5.03	3.51	3.55	5.17	5.34	4.37	4.66
October	3.25	3.12	3.14	3.19	3.54	3.82	3.27	3.33
November	2.63	2.41	2.33	2.24	2.29	2.48	2.14	2.36
December	4.04	3.96	3.57	3.33	4.04	4.03	2.81	3.68
Total for year	45.30	47.45	44.32	45.24	48.87	50.48	45.07	46.67

TABLE No. 11.

Rainfall and Runoff on Croton Watershed.

Month.	1900. Rainfall Inches.	1900. Runoff, Inches.	1901. Rainfall, Inches.	1901. Runoff, Inches.	1902. Rainfall, Inches.	1902. Runoff, Inches.
January	3.76	1.77	1.63	1.22	2.91	3.79
February	7.66	6.51	0.84	.44	4.04	2.94
March	4.77	5.50	7.18	5.15	6.42	9.86
April	2.03	1.93	8.19	7.56	4.42	3.21
May	5.87	2.52	7.01	4.27	3.57	1.81
June	2.44	.70	1.48	1.60	4.69	.82
July	3.87	.45	8.35	1.42	4.29	.74
August	2.38	.12	9.03	4.33	2.52	.57
September	3.36	.31	5.49	2.15	6.34	.70
October	4.17	.55	3.94	2.68	6.23	2.41
November	5.36	1.32	1.80	1.24	0.90	1.42
December	2.52	1.92	8.81	4.71	7.15	5.52
Total	48.19	23.60	63.75	36.81	53.48	33.79
Per cent		49		58		63

Month.	1903. Rainfall Inches.	1903. Runoff, Inches.	1904. Rainfall, Inches.	1904. Runoff, Inches.	1905. Rainfall, Inches.	1905. Runoff, Inches.
January	4.34	3.63	4.01	2.31	6.79	4.38
February	4.88	3.71	3.26	2.83	1.70	1.26
March	5.56	6.04	3.68	5.45	4.22	4.62
April	2.97	3.37	4.35	3.18	3.16	3.70
May	1.05	.62	4.10	1.63	1.10	0.98
June	11.26	3.29	2.37	1.16	6.37	1.16
July	2.90	1.57	5.51	0.85	3.23	0.38
August	7.74	1.52	7.02	1.22	6.07	0.52
September	3.03	1.81	7.01	2.54	4.66	1.31
October	7.86	5.01	3.75	1.59	3.33	0.74
November	2.76	1.71	2.19	1.37	2.36	0.60
December	4.48	2.71	3.45	1.10	3.68	1.19
Total	58.83	34.99	50.70	25.23	46.67	20.84
Per cent		59		50		45

Prevention of Water Waste.

The unsatisfactory condition of the supply, above outlined, renders it more than ever necessary that measures long delayed or suspended should be taken at once to ascertain and check preventable waste. The present Chief Engineer has repeatedly asserted in past reports that many of the published statements as to the amount of waste that could be prevented are exaggerated and he sees no reason to change that opinion. Estimates of a saving of waste exceeding 15 per cent. of the consumption would seem to the writer unsafe and unwarranted in Greater New York. Even if this figure be adopted, however, it would represent, on the basis of the present consumption, a saving of about 45,000,000 gallons per day, which is a considerable amount, equivalent, approximately, to the annual normal increase of three years.

To properly carry out the work of the water waste investigation, I would recommend the organization of a separate division in the Chief Engineer's Bureau, where the entire work would be handled. An Assistant Engineer should be placed in charge who has had experience in similar work, and it might be therefore advisable to request the Civil Service Commission to exempt that position so that men with special training for the purpose could be secured. The assistants could be drawn from the lower grades of men already in the Department and from new men to be appointed, as required, from the Civil list. The work will be divided into two parts, i. e.:

First—Investigation of mains and house-to-house inspection.

Second—Installation of meters.

Investigation of Mains and House-to-House Inspection—In order to efficiently carry out the investigation of leaks and waste, it is necessary to measure the flow in the mains, as many cases of illegal use of water or waste may occur that cannot possibly be detected by surface inspection, and several million gallons may be and probably are lost through causes which cannot be revealed except by determining the flow in the mains. This measuring is always done by some form of metering.

By the well-known Deacon system, meters are placed on the mains and the districts divided into comparatively small areas by these meters, so that the flow in each district can be measured. The cost of these meters and expense of both installation and maintenance is high and a separate meter has to be used at every point. They also give more or less trouble to keep in repair.

The Venturi meter, or proportional meter, may be used in place of the Deacon, but are also open to the objection of high expense and cannot be removed after once being set, except at considerable additional cost.

We have successfully employed in Brooklyn a modification of the Pitot tube, perfected by Mr. Fladd and now known as the Fladd-Cole pitometer, which I discussed in my annual report for Brooklyn in 1902, and this device was also afterwards used in Manhattan. The main improvement consists in the attachment of a photographic recording apparatus, by means of which a continuous record can be obtained without the need of an observer stationed where the Pitot tube is set. One set of Pitot tubes can be used on any number of taps and if a district shows a suspiciously high rate of night flow, taps can be readily inserted at various points in the district and the flow traced until it is finally located. While readings of the pitometer are not reliable at very low velocities, taking all factors into consideration, these instruments, if handled by competent and efficient observers, afford probably one of the most convenient means to carry on the work under consideration. The records of the instruments are removed every twenty-four hours and an exact reproduction of the varying velocity of flow in the main is obtained, and when it is desired to continue the measurements for a longer period than 24 hours, new sheets are placed on the photographic drum and removed at 24-hour intervals. In Brooklyn, by the use of the Pitot tubes in 1903, we found in one district a night flow at the rate of over 4,000,000 gallons per day, which was greater than the day flow. By additional taps on the mains we were able to locate the flow as being on a certain block, and when the superintendent of the factory situated on that block found that this work was being done, the flow greatly decreased. In another case it was discovered that a 20-inch gate between the high and low service districts was opened a very few turns, but sufficiently to allow approximately 400,000 gallons per day to flow from the high into the low service.

In addition to the measuring of the flow in the various districts, we used the Pitot tube to ascertain the flow through the large trunk mains in Brooklyn and thus determined the sections in which additional mains were needed to reduce the velocity where exceptional frictional losses were occasioned by high velocity.

The work of subdivision into districts and measurement of flow in the mains should be systematically continued until the whole system is covered. The house-to-house inspection would tend to correct the waste through leaky fixtures, and, in order to secure permanent results from such an inspection, it would be advisable to prescribe a fine for each leaky fixture that would be found after the expiration of a certain notice to that effect. In times of emergency we have repeatedly secured a considerable reduction in consumption by a careful house-to-house inspection, but, the danger once passed and the force withdrawn, the leaky fixtures reappear.

Installation of Meters—That the metering of the supply is the true and permanent corrective of preventable waste is the unanimous opinion of all the engineers in charge of our water works throughout the country. As previously stated, it will not bring the consumption to the extreme figures often claimed, and which, as already stated, the Chief Engineer deems erroneous. In many cases the tenants will readily pay the necessary meter charges rather than shorten their usual supply, and in others the meter charge may be much lower than the expense required to make certain plumbing alterations, but it will undoubtedly check house waste. Hitherto the unpopularity of the measure has retarded its adoption in spite of its obvious advantages. The measuring of the water and consequent necessary inspection is repugnant to our citizens; it is difficult to convince the great body of them that they pay now for the waste of water; that, while it may be well to say that it should be as free as air, it cannot be as readily obtained, and that the system will not be exacting and burdensome. It would seem practicable, however, to install the system with the following provisions:

First—That the meters should be furnished and installed at the cost of the City and not at the expense of the householder, as at present.

Second—That a flat minimum rate should be established in order to prevent the curtailment of a free use of water in the poor tenement districts among the people where it is mostly needed, and to prevent landlords, otherwise disposed, to find any excuse for raising their rents.

Third—That the installation should be gradual, so as not only to distribute the expense but to secure the necessary data for the permanent and advantageous working of the system.

The work should be begun by selecting several typical districts; i. e., residential, manufacturing, tenement, etc., in Manhattan and Brooklyn, and metering every house thereon, the meters being used simply to determine the consumption. At the same time a careful house to house inspection would be maintained throughout these districts, and the householders would be required to keep the plumbing fixtures in every case in perfect condition. After a period of observation under this method of, say, six months or more, the necessary data would have been secured to formulate the charges so that these would not be in excess of those previously paid, unless there was leakage through the fixtures. In other words, there would be only an extra charge when there was preventable waste of water without benefit to anyone. After the meter rates have been thus determined and the meter charges established, the period of observation might still be continued, if desired, so as to test its practical value and pass upon such changes as might be required before extending the system all over the City. It might be advantageous to take three or four years to complete the installation.

Under these conditions, if thoroughly understood, little or no objection should be found to the proposed system, and the preliminary installation would certainly be worth all it would cost. At the end of the trial period we would have facts to deal with, and the discussion, instead of being, as hitherto, largely academic, would become practical. If the results obtained are in accordance with the expectations of the advocates of the meter system, the latter could be safely installed; if, on the other hand, it were proven that the fears of the opponents of meters were well founded, the plan could be abandoned. In either case this important and most vexed question would be settled once for all.

Croton Watershed, Maintenance and Repairs.

The regular work in and around the Croton Watershed, along the lines of the new and old aqueducts, the Bronx river pipe lines and distributing reservoirs, has been continued as usual. It has consisted in building and repairing post rail and stone wall fences, putting in place rip-rap masonry, repairing of paving, pointing, coping and gravel surfacing on roads, filling cellars at Mahopac Village and collection of weekly samples from the reservoirs, lakes and streams for the laboratory at Mt. Kisco.

The contract for the improvement of the spillway and river channel at East Branch Reservoir was completed in November, 1905. The contract for building the stone wall fences at Cranberry pond has not been completed. The contractor has not prosecuted the work in the proper manner, although his time has been extended.

Considerable work has been done in abating nuisances at Everett's brook, Tilly Foster mine and Reynoldsville, Dutchess County, and patrolling streams and reservoirs.

The electrozone plant at Brewsters, N. Y., was operated without interruption during the last quarter.

The lower section of the old aqueduct has not been in use for a number of years, on account of the construction of the Jerome Park Reservoir. The old aqueduct was cut in two at this place; and when the work progressed far enough water was let in, and a break occurred south of the Kingsbridge road. This break was repaired and this section put in good order during the last quarter.

The annexed tables give a summary of the work performed during the year.

TABLE No. 12.

Showing Summary of Work Done on Maintenance and Repairs in 1905.

	Earth Excavated, Cu. Yds.	Earth Hauled, Cu. Yds.	Stone Quarried, Cu. Yds.	Drystone Masonry, Cu. Yds.	Concrete Masonry, Cu. Yds.	Cutstone Masonry, Cu. Yds.
Division No. 1	29	....	....	....	....	....
Division No. 2	3	....	....	162	....	....
Division No. 3	....	....	....	....	....	....
Division No. 4	65	30	....	64	....	....
Division No. 5	93	25	510	104	....	....
Division No. 6	282	....	....	27	9	....
Division No. 7	....	....	....	59	....	....
Division No. 8	....	....	....	....	....	....
Putnam County Division	232	....	....	577	....	....
Titicus	....	....	....	....	....	....
Brewsters	49	....	725	432	717	94
Muscoot	....	....	....	8	....	....
Bronx system	....	....	....	....	....	....
Total	753	55	1,235	1,433	726	94

	Rubble Range Masonry, Cu. Yds.	Cement Masonry, Cu. Yds.	Riprap Masonry, Cu. Yds.	Brick Masonry, Cu. Yds.	Filling and Grading, Cu. Yds.	Pointing Coping, Lin. Ft.
Division No. 1	....	....	....	....	....	....
Division No. 2	....	....	....	....	32	....
Division No. 3	....	....	....	....	....	....
Division No. 4	....	....	....	....	72	....
Division No. 5	....	14	....	7	112	....
Division No. 6	....	....	....	....	55	....
Division No. 7	....	....	....	8	....	....
Division No. 8	....	....	....	....	....	....
Putnam County Division	....	3	613	....	761	2,715
Titicus	....	....	28	....	....	....
Brewsters	2,305	....	2,939	....	....	....
Muscoot	....	....	38	....	....	....
Bronx system	....	....	....	....	....	....
Total	2,305	17	3,618	15	1,032	2,715

	Pointing Masonry, Sq. Yds.	Coping Reset, Lin. Ft.	Paving, Sq. Yds.	Paving Gutter, Sq. Ft.	Slope Paving, Sq. Yds.
Division No. 1	....	....	....	....	....
Division No. 2	....	....	....	....	....
Division No. 3	....	....	....	....	....
Division No. 4	....	....	....	....	....
Division No. 5	9	....	....	....	....
Division No. 6	....	....	....	....	....
Division No. 7	10	40	....	....	....
Division No. 8	....	....	....	....	....
Putnam County Division	400	....	113	245	245
Titicus	....	....	....	....	....
Brewsters	....	....	....	....	....
Muscoot	....	....	....	....	....
Bronx system	....	....	....	....	....
Total	419	40	113	323	245

	Flag Relaid, Sq. Ft.	Bluestone Manhole Covers Set.	Stone Hauled, Cu. Yds.	Brick Hauled.	Gutters Cleaned, Lin. Ft.	Manure Spread, Cu. Yds.
Division No. 1	....	....	....	....	....	....
Division No. 2	8	....	....	1,000	....	....
Division No. 3	....	....	....	....	....	....
Division No. 4	....	....	80	....	....	....
Division No. 5	....	25	104	....	3,247	14
Division No. 6	....	....	....	....	....	....
Division No. 7	1,186	....	....	....	....	225
Division No. 8	....	....	....	....	....	195
Putnam County Division	....	....	....	....	....	....
Titicus	....	....	....	....	....	....
Brewsters	....	....	....	....	....	....
Muscoot	....	....	....	....	....	....
Bronx system	....	....	....	....	....	....
Total	1,194	25	184	1,000	3,247	434

	Fence Built, Lin. Ft.	Fence Repaired, Lin. Ft.	Fence Painted, Lin. Ft.	Fence Gates Made and Set.	Fence Gates Repaired.
Divisiin No. 1	....	....	1,580	....	....
Division No. 2	....	6,835	1,217	6	....
Division No. 3	1,965	6,392	8,287	10	....
Division No. 4	1,988	2,945	2,710	....	....
Division No. 5	1,056	241	847	....	....
Division No. 6	1,950	1,350	2,500	4	....
Division No. 7	386	....	65	....	....
Division No. 8	3,476	....	3,684	....	....
Putnam County Division	10,877	15,196	9,740	....	....
Titicus	824	17,915	1,074	....	....
Brewsters	531	....	....	....	....
Muscoot	4,290	7,260	3,200	....	23
Bronx system	10,340	....	10,340	....	....
Total	37,683	58,134	45,244	20	23

	Telephone Poles Cut and Made.	Telephone Poles Set.	Fence Posts Cut and Made.	Fence Posts Painted.	Fence Posts Set.	Screens Made and Set.
Division No. 1	100	24	....	....	....	....
Division No. 2	....	29	90	....	....	2
Division No. 3	....	26	....	....	....	....
Division No. 4	....	3	....	....	....	....
Division No. 5	....	2	....	....	....	....
Division No. 6	....	3	....	....	....	....
Division No. 7	....	....	....	....	....	....
Division No. 8	....	....	....	1,200	800	....
Putnam County Division	....	....	....	....	202	....
Titicus	....	....	....	....	344	....
Brewsters	....	....	....	....	....	....
Muscoot	....	....	....	....	....	....
Bronx system	....	....	....	....	....	....
Total	100	87	90	1,200	1,346	2

An effective supervision of the Croton and Byram watersheds and proper maintenance of the City property and protection of the supply cannot be adequately attended to with the insufficient force allowed. An increase of the latter is necessary so that the required work may not be delayed as it has been in the past.

Pollution at Mt. Kisco, Bedford, etc.

On a personal inspection made during the year, I ascertained that there was serious danger of pollution from the sewage of the Montefiore Home at Bedford Station. Plans had been prepared by the trustees of the institution to treat the sewage from the Home before it found its way to our streams, but, owing to poor design and improper work, this result had not been accomplished, and the sewage from the Home was a serious menace to our water supply. I immediately laid the matter, showing the gravity of the situation, before the directors of the Montefiore Home, who, from the outset, showed the utmost willingness to take all measures necessary to avert the danger. Temporary means were immediately adopted to prevent pollution by treating the effluent at the Home itself with chloride of lime, and new plans were prepared for permanent works which would safeguard the supply. The results obtained by temporary treatment, ascertained from constant analyses, are entirely satisfactory, and I have received the earnest assurance of the directors of the Home that the permanent works for the effective treatment of the sewage will be completed next year.

During my inspection of the watershed, above referred to, I found also that at Mt. Kisco there was imminent danger of pollution from the drainage of lands in part occupied by cheap dwellings of tenants previously removed from plots condemned by the City for the protection of the stream. Those tenants simply moved their buildings a few feet away and therefore the danger from pollution remained as before. I prepared a map showing additional plots in the lowlands to be condemned, as there was no possibility of sewering them, and in the district known as "Under the Mountain," I recommended the condemnation of land far enough up the slope of the hill to make it sure either that no buildings would be erected higher up, or that if so erected, they could be sewered.

There is danger of contamination from the drainage of the Town of Bedford, part of which flows into Kisco river and part into a stream entering Cross river near Katonah; also on the Titicus Reservoir from the Titicus river, a large part of which is in the State of Connecticut and beyond the control of the State of New York. In this case, after an inspection of the locality, I have recommended the lease of a plot of land situated in Connecticut and the purchase of the machinery of the laundry, tearing down of buildings, and also the lease of other plots in the State of Connecticut, as well as the panning of a few of the closets. Negotiations to carry these measures into effect are under way. These have been deemed the speediest methods of procedure, although I have also recommended that the co-operation of the authorities of the State of Connecticut be requested to permanently abate all nuisances along these sources of supply. There is also contamination from North Salem and Salem Centre, situated on the same river in the State of New York. At Mahopac the drainage from the large summer population along its shore is a source of pollution, and Lake Gleneida is affected by the drainage from a portion of the Town of Carmel, which eventually enters the lake.

Sewerage of Watershed.

While, as already indicated in my quarterly reports, I believe that the Croton supply should be filtered, and our citizens have reason to demand it, the foregoing statements show that a sewerage system that would divert the yearly increasing pollution from the villages on our watershed should be planned and carried out jointly by these villages and by the City. Some preliminary work in the preparation of plans is under way, but of at least as much importance is the agreement for co-operation with the villages in interest. I would recommend that the necessary steps be taken without delay to secure common action.

ANALYTICAL AND BIOLOGICAL WORK PERFORMED DURING THE YEAR ENDING DECEMBER 31, 1905.

Mt. Kisco Laboratory.

During the summer of 1905 the Katonah Laboratory was dismantled and re-established at Mt. Kisco on property owned by the City. The new laboratory is near the railroad station, and is much more convenient to Croton Lake and other important points on the watershed. After January 1, 1906, the entire water examinations for Manhattan and The Bronx, except for the distributing systems, will be made at Mt. Kisco Laboratory. Heretofore a large part of this work has been carried on at Mt. Prospect Laboratory, Brooklyn.

Collection of Samples.

The schedule for the collection of samples of water for analysis has been practically as follows:

Daily samples have been collected from the terminus of the Croton Aqueduct at the One Hundred and Thirty-fifth street gatehouse and at a tap in City Hall Square. These samples have been analyzed physically and bacteriologically. Chemical, microscopical and bacteriological analyses have been made upon weekly samples collected from the outlets of the distribution reservoirs in Central Park and at High Bridge; from the Williamsbridge Reservoir; from the One Hundred and Thirty-fifth street gatehouse and from the tap in City Hall Square. All of the above samples have been sent to Mt. Prospect Laboratory in Brooklyn. Weekly samples have been collected from all the storage reservoirs on the Croton Watershed, from a number of places on the Croton river and its tributaries and from the reservoirs of The Bronx and Byram systems. These samples have been sent to the branch laboratory at Mt. Kisco and examined bacteriologically and physically, and on alternate weeks microscopical examinations have been made. Once a month samples from these reservoirs have been sent to Mt. Prospect Laboratory for chemical analysis. Samples have been collected from the ground water supplies in the Boroughs of Queens and Richmond as often as once a month or once a quarter, as occasion seemed to require, and given a complete sanitary analysis at Mt. Prospect Laboratory.

ANALYTICAL WORK ON WATER.

The following figures give the amount of work which has been done at Mt. Prospect Mt. Mt. Kisco laboratories during the year 1905:

Total Samples of Water Analyzed by Laboratories.

Mt. Prospect Laboratory	2,126
Mt. Kisco Laboratory	2,830
Total	4,956

Total Samples of Water Analyzed by Boroughs.

Manhattan	3,965
Queens	454
The Bronx	459
Richmond	78
Total	4,956

Physical examinations	3,198
Complete chemical analyses	779
Partial chemical analyses	758
Microscopical examinations	1,686
Bacteriological examinations	4,034
Bacteriological tests for bacillus coli	4,179

General Analytical Work.

The following table gives an idea of the general analytical work done during the year:

Cement samples examined	11
Oil samples examined	45
Coal samples examined	33
Sand samples examined	2
Paint samples examined	6
Pig lead samples examined	4
Boiler compounds examined	1
Potash examined	2
Mineral analyses	1
Special tests and experiments	50

Reports.

During the year 1905, 152 special reports have been made on the quality of the numerous sources of supply and on oil, coal and the various constructional materials used in the Department for the boroughs of Manhattan, The Bronx, Queens and Richmond.

The following gives an idea of the increase in special work for these boroughs during the year as compared with the two previous years:

	1903.	1904.	1905.
Special reports	50	139	152

Special tests have been made in connection with changes in the sewage disposal systems at Mt. Kisco, Brewsters and the Montefiore Home, and an unusually large amount of general inspection work has been carried on throughout the watersheds of Manhattan and The Bronx.

In connection with the high pressure fire system for Manhattan, a large number of samples of salt water were examined in order to assist in determining the best positions for the pumping stations and fireboat connections.

From the Mt. Kisco Laboratory weekly reports have been made on the quality of the water in the distributing systems for Manhattan and The Bronx.

Quality of the Water.

BOROUGH OF MANHATTAN.

The following table gives a comparison of the average quality of the high service and low service waters supplied to the Borough of Manhattan for the years 1904 and 1905:

	135th Street Gatehouse.		Tap in City Hall Square.	
	1904.	1905.	1904.	1905.
Physical Examination—				
Turpidity	6	5	5	4
Color	23	26	21	23
Per cent. of samples with distinct vegetable odors	2.4	0.6	1.5	0.0
Per cent. of samples with odors of decomposition	2.1	1.1	2.2	0.3
Per cent. of samples with odors due to organisms	7.3	0.9	5.5	0.6
Chemical Examination—				
Albuminoid ammonia	0.146	0.174	0.111	0.126
Free ammonia	0.038	0.061	0.020	0.017
Nitrites	0.004	0.003	0.003	0.003
Nitrates	0.06	0.07	0.07	0.08
Total solids	71.0	73.0	....	....
Chlorine	1.8	1.8	....	....
Hardness	38.0	38.0	....	....
Alkalinity	35.0	35.0	....	....
Iron	0.30	0.41	....	....
Microscopical Examination—				
Microscopic organisms	729	599	523	450
Amorphous matter	411	419	106	180
Bacteriological Examination—				
Bacteria, per cc	1,449	2,337	385	454
Per cent. of positive tests for B coli in 0.1 cc	3.3	4.3	1.3	1.4
Per cent. of positive tests for B coli in 1.0 cc	11.7	16.0	6.2	5.7
Per cent. of positive tests for B coli in 10.0 cc	23.4	32.7	11.4	16.4

The preceding table shows that the high and low service water supplied to the Borough of Manhattan during the year 1905 was of practically the same quality as in the preceding year, except that there was an increase in bacteria and coli. This increase was entirely due to the use of the water from New Croton Lake during the month of June. As that portion of the lake had not been previously flooded, the extraction of organic matter from the bottom of the lake was sufficient to produce this result.

The accompanying diagram shows the daily fluctuations in the quality of the water during the year 1905. This diagram is practically the same as that presented in previous years, except for the high bacterial rise during the month of June, which has previously been explained.

BOROUGH OF THE BRONX.

The following tables give the comparative average analyses of the Williamsbridge Reservoir for the years 1904 and 1905:

	Inlet.		Outlet.	
	1904.	1905.	1904.	1905.
Physical Examination—				
Turpidity	5	5	5	6
Color	15	24	16	25
Per cent. of samples with distinct vegetable odors	7.7	0.0	7.7	0.0
Per cent. of samples with odors of decomposition	0.0	0.0	3.9	1.9
Per cent. of samples with odors due to organisms	0.0	0.0	3.9	0.0
Chemical Examination—				
Albuminoid ammonia	0.150	0.145	0.135	0.124
Free ammonia	0.046	0.046	0.024	0.025
Nitrites	0.002	0.003	0.002	0.003
Nitrates	0.04	0.05	0.04	0.05
Total solids	60.0	65.0	....	....
Chlorine	2.4	2.3	....	....
Hardness	31.0	31.0	....	....
Alkalinity	25.0	26.0	....	....
Iron	0.18	0.24	....	....
Microscopical Examination—				
Microscopic organisms	433	123	460	177
Amorphous matter	400	350	419	348
Bacteriological Examination—				
Bacteria, per cc	608	406	626	383
Per cent. of positive tests for B coli in 0.1 cc	0.0	1.9	1.9	0.0
Per cent. of positive tests for B coli in 1.0 cc	0.0	7.7	7.7	7.7
Per cent. of positive tests for B coli in 10.0 cc	5.8	13.5	11.5	11.5

The above table represents the tap water supplied to the Borough of The Bronx, excepting that portion pumped by the Westchester Water Company, which is drawn from the Croton Aqueduct and is of the same quality as that supplied to the Borough of Manhattan. The small amount previously drawn from the Yonkers Water Works was discontinued during the year.

The table also shows that the water supplied to The Bronx Borough is of good quality and somewhat better than that delivered during the previous year.

BOROUGH OF QUEENS.

The accompanying table (No. 13) gives the average analyses of the various waters supplied to the Borough of Queens during the year 1905.

All of the water delivered to this borough is from driven wells, except a portion of the Flushing water supply. Owing to the use of the new well system at the Flushing Pumping Station, much less surface water than usual has been used during the year.

The table shows that B. coli has been present in the waters supplied by the Long Island City Water Company's Stations Nos. 1 and 3, the Citizen's Water Company Station No. 3, and Queens County Water Supply Company. In the case of the first two companies mentioned, unsanitary conditions have existed around the tops of the wells. The pollution from these conditions has only recently manifested itself, and while the water is at present safe for drinking purposes, the conditions in these localities should be improved in order to insure against future deterioration of the water. The water from the Queens County Water Supply Company is occasionally drawn from two brooks in the neighborhood of the station. The company has been notified to discontinue the use of these sources of supply.

Daily analyses of chlorine have been made during the year of the water from the North Beach Pumping Station, and these results have been reported weekly. The amount of salt contained in this water has been kept at as low a figure as possible, but owing to the highly corrosive nature of the minerals which come from infiltration of sea water into these wells, it is recommended that this water be discontinued for use as soon as it can be replaced.

The other sources of supply for this borough are entirely satisfactory, as will be seen by an examination of the analyses given on the accompanying blank.

BOROUGH OF RICHMOND.

The average results of the analyses of water from the various sources of supply for the Borough of Richmond during the year 1905 are given in the accompanying table. The figures do not vary materially from those of the preceding year. The new Springville Station is higher than normal in bacteria, as a portion of the wells are sunk in a stream on the banks of which very unsanitary conditions prevail. The high bacteria at Bull's Head Station is merely due to the fact that new wells are being drawn upon. The more recent analyses show that this number has been reduced to nearly a normal figure. The water supplied by the West New Brighton Pumping Station of the Staten Island Water Supply Company is at times of poor quality, due to the fact that in periods of drought a polluted stream in the neighborhood is drawn upon. This water is also very high in mineral matter, due to the infiltration of sea water. The other sources of supply, although containing considerable lime, are otherwise of very good quality.

Inasmuch as the Department of Water Supply, Gas and Electricity has no control over any of the sources of supply except that at Tottenville, the criticisms of the quality of the water supplied by the Staten Island Water Supply Company herein given have been brought to the attention of the Deputy Commissioner of Water Supply for Richmond, in order that he may take such measures as may be deemed advisable to eliminate the various sources of pollution in the borough.

TABLE

Showing Average Analyses of Waters

No.	Date of Collection.	Sample. Place of Collection.	Physical Examination. Temperature (Fahr.).	Turbidity (Parts Per Million of Silica).	Color (Parts Per Million of Platinum).	Odor.	Bacteriological Examination. Number of Bacteria Per cc. 48 Hours at 20° C.	B. Coli. In .1 cc. Per Cent.	In 1 cc. Per Cent.	In 10 cc. Per Cent.	In cc	Microscopical Examination. Number of Standard Units Per cc. Total Microscopic Organisms.	Amorphous Matter.	Pediastrum.	Important Genera.
1	..	Long Island City Pumping Station Nos. 1 and 3	..	..	2	..	136	..	9	27	..	..	15	..	..
2	..	Citizens' Water Company Nos. 1 and 6	..	..	1	..	79	..	..	6	..	..	21	..	..
3	..	Flushing Pumping Station Wells	..	..	..	..	14	..	..	..	..	..	10	..	..
4	..	North Beach Pumping Station	..	..	..	..	..	..	..	..	..	..	..	..	..
5	..	Tap in Flushing	..	3	4	11	183	..	..	..	..	153	277	80	..
6	..	Whitestone Pumping Station No. 1	..	1	1	..	9	..	..	..	..	..	..	..	..
7	..	Jamaica Water Supply Company Nos. 1 and 2	..	..	1	..	11	..	..	..	..	..	3	..	..
8	..	Woodhaven Water Supply Company	..	..	1	..	95	..	..	..	..	..	10	..	..
9	..	Montauk Water Supply Company	..	..	..	..	12	..	..	..	..	..	3	..	..
10	..	Queens County Water Company, Filtered	..	..	1	..	..	..	8	25	..	..	2	..	..

TABLE

Showing Average Analyses of Waters

No.	Date of Collection.	Sample. Place of Collection.	Physical Examination. Temperature (Fahr.).	Turbidity (Parts Per Million of Silica).	Color (Parts Per Million of Platinum).	Odor.	Bacteriological Examination. Number of Bacteria Per cc. 48 Hours at 20° C.	B. Coli. In .1 cc. Per Cent.	In 1 cc. Per Cent.	In 10 cc. Per Cent.	In cc.	Microscopical Examination. Number of Standard Units Per cc. Total Microscopic Organisms.	Amorphous Matter.	Pediastrum.	Important Genera.
1	..	Staten Island Water Supply Company—													
		New Springville Wells	..	..	3	..	242	..	..	..	..	..	8	..	..
		Bulls Head Wells	..	..	3	..	387	..	..	..	..	..	6	..	..
		Brighton Heights Wells	..	..	..	..	15	..	..	..	..	..	..	..	..
		West New Brighton Pumping Station	..	6	16	..	244	..	11	22	..	7	459	..	..
		Taps, at Inspector's Residence	..	..	7	..	198	..	..	50	..	10	65	..	..
2	..	Crystal Water Supply Company—													
		Grant City Wells	..	..	2	..	88	..	..	..	..	..	23	..	..
		Clove Street Pumping Station	..	..	..	..	25	..	..	..	..	..	29	..	..
		Linoleumville Wells	..	2	13	..	2	..	..	..	..	..	23	..	..
3	..	South Shore Water Supply Company—													
		New Dorp Wells	..	..	1	..	26	..	..	..	..	..	2	..	..
4	..	Municipal Plant—													
		Tottenville Wells	..	14	34	..	11	..	..	..	..	6	300	..	..

Contracts Entered Into During the Year 1905.

BOROUGHS OF MANHATTAN AND THE BRONX.

Norton & Dalton.

Furnishing, delivering and laying water mains in Columbus, Grant, Jackson and Saxe avenues, etc. $96,654 00

Furnishing, delivering and laying water mains in Avenue A, Edgecombe and Lexington avenues, etc. 79,053 00

John Fox & Co.

Furnishing and delivering stop-cocks, hydrants, etc. 24,449 50

Nicholas L. Stokes.

Furnishing, delivering and storing 16,300 gross tons anthracite coal. 85,575 00

H. Mueller Manufacturing Company.

Furnishing and delivering tapping cocks, boxes, drills, etc. 5,146 28

William E. Burke.

Furnishing and delivering lubricating oils. 2,625 00

Kennedy Valve Manufacturing Company.

Furnishing and delivering double and triple nozzle hydrants, lead lined iron pipe, etc. 16,476 25

John Twiname.

Regulating, grading and fencing block, Fifth avenue, One Hundred and Thirty-ninth street, One Hundred and Fortieth street and Harlem river, and building frame office. 3,747 50

John Fox & Co.

Furnishing and delivering white wood plugs, bolts, etc. 2,144 10

Pine Products Company.

Furnishing and delivering pig lead. 5,670 00

Wilton Construction Company.

Hauling and laying water mains in Lafayette, Washington and St. Lawrence avenues, etc. 4,288 17

Nicholas L. Stokes.

Furnishing and delivering anthracite and bituminous coal, coke and cordwood 598 00

Frederick T. Tapley.

Furnishing and delivering single and double nozzle New York case hydrants 5,675 00

John L. Florence.

Furnishing materials, repairing and restoring artificial stone sidewalks, etc. 1,800 00

John J. Bradley.

Loading, hauling and unloading pipe and specials. 1,992 20

Clark & Wilkins.

Furnishing and delivering anthracite and bituminous coal, coke and cordwood 1,260 00

Gallo & Pittelli.

Water mains in Southern boulevard, near One Hundred and Forty-second street, under tracks of Port Morris Branch of New York Central Railroad Company, taking up and relaying. 12,022 50

Frank K. D'Ossone.

Furnishing, repairing, placing and emptying vault pans at Mount Kisco. 2,008 00

Louis D. Gregory.

Hauling and laying water mains in Bassford, Cypress, Harrison avenues, etc. 6,297 20

Wilton Construction Company.

Furnishing, delivering and laying water mains in Avenue St. John, etc. 123,155 81

Patrick Goodman.

Furnishing, delivering and laying water mains in the Bowery, etc. 300,436 00

Snare & Triest.

Furnishing materials and building monitors, grating platforms and stairways in engine houses. 14,460 00

Gallo & Pittelli.

Furnishing, delivering and laying water mains in Morningside Avenue West, etc. 110,845 00

Cunningham & Kearns.

Furnishing, delivering and laying water mains in Ann and Beekman streets, etc. 169,625 00

No. 13.

Supplied to the Borough of Queens in 1905.

No.	Date of Collection.	Place of Collection.	Chemical Analysis (Parts Per Million). Nitrogen As: In Solution.	Albuminoid Ammonia In Suspension.	Total.	Free Ammonia.	Nitrites.	Nitrates.	Total Solids.	Suspended Solids.	Loss on Ignition.	Fixed Solids.	Chlorine.	Hardness.	Alkalinity.	Iron.
1	..	Long Island City Pumping Station Nos. 1 and 3.	..	..	.027	.035	.017	3.81	320	..	..	..	26.5	194	127	.09
2	..	Citizens' Water Company Nos. 1 and 6.....	..	..	.023	.024	.022	6.79	283	..	..	..	13.4	172	113	.10
3	..	Flushing Pumping Station Wells.....	..	..	.006	.002	.001	2.20	105	..	..	..	6.7	42	32	.05
4	..	North Beach Pumping Station.....	..	..	.011	.004	.003	5.93	692	..	..	..	124.0	328	136	.08
5	..	Tap in Flushing.....	.031	.022	.053	.034	.005	2.82	115	..	35	80	7.1	52	33	.17
6	..	Whitestone Pumping Station No. 1.....	..	..	.015	.018	.002	4.37	233	..	..	..	11.4	154	111	.07
7	..	Jamaica Water Supply Company Nos. 1 and 2..	..	..	.021	.016	.011	5.34	169	..	..	..	12.4	77	36	.19
8	..	Woodhaven Water Supply Company.....	..	..	.011	.004	.005	2.14	195	..	..	..	10.4	146	118	.03
9	..	Montauk Water Supply Company.....	..	..	.019	.020	.006	4.63	216	..	..	..	22.4	111	77	.05
10	..	Queens County Water Company, Filtered.....	..	..	.019	.007	.001	.01	43	..	..	..	4.1	13	8	.10

No. 14.

Supplied to the Borough of Richmond.

No.	Date of Collection.	Place of Collection.	Chemical Analysis (Parts Per Million). Nitrogen As: In Solution.	Albuminoid Ammonia In Suspension.	Total.	Free Ammonia.	Nitrites.	Nitrates.	Total Solids.	Suspended Solids.	Loss on Ignition.	Fixed Solids.	Chlorine.	Hardness.	Alkalinity.	Iron.
1	..	Staten Island Water Supply Company—														
		New Springville Wells.....	..	..	.032	.007	.001	3.79	174	..	..	..	11.6	134	78	.06
		Bulls Head Wells.....	..	..	.022	.010	.002	.17	138	..	..	..	6.0	83	79	.09
		Brighton Heights Wells.....	..	..	.044	.020	.001	.05	140	..	..	..	6.8	155	116	.10
		West New Brighton Pumping Station.....	..	..	.040	.018	.005	2.84	526	..	..	..	159.9	228	80	1.18
		Taps, at Inspector's Residence.....	..	..	.032	.012	.003	2.40	307	..	32	275	73.7	158	87	.35
2	..	Crystal Water Supply Company—														
		Grant City Wells.....	..	..	.013	.003	.003	3.21	166	..	..	..	7.7	138	95	.11
		Clove Street Pumping Station.....	..	..	.014	.006	.003	.76	141	..	..	..	7.1	148	106	.04
		Linoleumville Wells.....	..	..	.025	.073	.005	.87	177	..	..	..	11.9	143	94	.42
3	..	South Shore Water Supply Company—														
		New Dorp Wells.....	..	..	.014	.004	.002	3.14	233	..	..	..	8.6	172	158	.05
4	..	Municipal Plant—														
		Tottenville Wells.....	..	..	.019	.073	.002	.02	195	..	..	..	8.8	153	140	1.88

Wilton Construction Company.

Furnishing, delivering and laying water mains in Fulton, Prospect, Walton and Willow avenues, etc..... 32,251 95

Frederick N. Lewis.

Hauling, laying and relaying water mains in Two Hundred and Thirty-third street, between Jefferson avenue and Bronx river..... 2,258 41

Estate of John McClave.

Furnishing and delivering lumber..... 2,081 75

East River Mill and Lumber Company.

Furnishing and delivering lumber..... 513 95

Church E. Gates & Co.

Furnishing and delivering lumber..... 1,200 65

Windsor Fire Appliance Company.

Furnishing and delivering cotton waste, wipers and caulking yarn..... 135 00

Manhattan Supply Company.

Furnishing and delivering cotton waste, wipers and caulking yarn..... 222 00

Hugh L. Fox.

Furnishing and delivering cotton waste, wipers and caulking yarn..... 1,513 00

T. R. McMann's Sons.

Furnishing and delivering wrought iron and brass pipe and fittings..... 4,548 25

Crane Company.

Furnishing and delivering wrought iron and brass pipe and fittings..... 2,015 45

Wilton Construction Company.

Furnishing, delivering and laying water mains in Anderson, Briggs avenues, etc. 92,488 30

Louis D. Gregory.

Furnishing, delivering and laying water mains in Green, Newell, Amsterdam avenues, etc..... 20,057 10

William E. Burke.

Furnishing and delivering agricultural, mechanics' and hardware supplies. 21 46

Cavanagh Bros. & Co.

Furnishing and delivering agricultural, mechanics' and hardware supplies. 398 45

$1,235,709 23

High Pressure Fire Service.

Bernstein & Bernstein.

Services as Architects for pumping station at northwest corner Oliver and South streets..... $3,500 00

Services as Architects for pumping station at Gansevoort street, near West 3,500 00

A. P. Smith Manufacturing Company.

Furnishing and delivering 1,050 four-nozzle post hydrants and 40 two-nozzle fireboat connection hydrants..... 104,640 00

Allis-Chalmers Company.

Furnishing, constructing and installing five electrically driven pumps... 119,635 50

Furnishing, constructing and installing five electrically driven pumps... 119,635 50

Continental Asphalt Paving Company.

Furnishing, delivering and laying water mains, etc., in southern district.. 1,036,242 50

Furnishing, delivering and laying water mains, etc., in middle district.... 917,330 50

Furnishing, delivering and laying water mains, etc., in northern district.. 870,709 75

$3,175,193 75

Total, Manhattan and The Bronx.

Contracts for maintenance, operation and improvements for the year 1905. $1,235,709 23

Contracts for account high pressure fire service for year 1905..... 3,175,193 75

Total..... $4,410,902 98

Contracts Entered Into During the Year 1905.

BOROUGH OF QUEENS.

A. J. McCollum.

Furnishing, delivering and storing 2,400 gross tons white ash anthracite coal $16,752 00

John Fox & Co.

Furnishing and delivering cast iron water pipes, branch pipes and special castings	1,347 90
Total	$18,099 90

Contracts Entered Into During the Year 1905.

BOROUGH OF RICHMOND.

Geo. W. Du Bois.

Furnishing, delivering and storing 600 gross tons white ash anthracite coal	$3,570 00

DISTRIBUTION SYSTEM.

BOROUGHS OF MANHATTAN AND THE BRONX.

Streets and Avenues in Which Water Mains Have Been Laid During the Year 1905.
(r) Indicates mains relaid and replacing others.

48-inch Pipe.

Kingsbridge road, between Gate House No. 6, Jerome Park reservoir, and Davidson avenue.
Davidson avenue, between Kingsbridge road and One Hundred and Ninety-second street.

30-inch Pipe.

Amsterdam avenue, between One Hundred and Seventy-fourth and One Hundred and Seventy-ninth streets.

20-inch Pipe.

(r) White Plains road, between Westchester avenue and St. Owen's place.
(r) Pearl street, between Broadway and Centre street.
Two Hundred and Thirty-third street, between Webster avenue and White Plains road.
Lexington avenue, between Forty-second and Forty-fifth streets.
White Plains road, between Morris street and north city line.

12-inch Pipe.

Longwood avenue, between Westchester avenue and Southern Boulevard.
Canal place, between One Hundred and Thirty-eighth and One Hundred and Forty-fourth streets.
One Hundred and Eighty-eighth street, between Amsterdam and Audubon avenues.
One Hundred and Eighty-ninth street, between Amsterdam and St. Nicholas avenues.
Naegle avenue, between Broadway and Tenth avenue.
Sherman avenue, between Broadway and Tenth avenue.
Academy street, between Sherman avenue and Two Hundred and First street.
Two Hundred and First street, between Academy street and Harlem river.
Avenue A, between Eighty-sixth and Ninety-second streets.
Spofford avenue, between Longwood avenue and Tiffany street.
Audubon avenue, between One Hundred and Seventy-fifth street and Fort George avenue.
One Hundred and Nineteenth street, between Amsterdam and Morningside avenues.
Ninth avenue, between Two Hundred and Eighteenth street and Broadway.
One Hundred and Thirty-first street, between Amsterdam avenue and Broadway.
One Hundred and Thirty-fourth street, between Amsterdam avenue and Broadway.
One Hundred and Thirty-sixth street, between Amsterdam avenue and Broadway.
One Hundred and Thirty-seventh street, between Broadway and Riverside drive.
Park avenue, between One Hundred and Thirty-second and One Hundred and Thirty-fifth street.
One Hundred and Eighty-first street, between Lafontaine and Daly avenues.
One Hundred and Eighty-sixth street, between St. Nicholas and Wadsworth avenues.
One Hundred and Eighty-eighth street, between St. Nicholas and Wadsworth avenues.
Sixty-fourth street, between Avenue A and East river.
Broadway, between One Hundred and Sixteenth and One Hundred and Nineteenth streets.
Broadway, between One Hundred and Twenty-first and One Hundred and Twenty-third streets.
One Hundred and Sixty-seventh street, between Amsterdam and Edgecombe avenues.
One Hundred and Seventy-first street, between Amsterdam avenue and Broadway.
One Hundred and Seventy-second street, between Amsterdam and Audubon avenues.
One Hundred and Fifty-seventh street, between Boulevard Lafayette and Riverside drive.
Forty-sixth street, between Eighth avenue and Broadway.
Forty-seventh street, between Eighth avenue and Broadway.
Forty-fifth street, between Eighth avenue and Broadway.
Cypress avenue, between One Hundred and Thirty-fourth street and One Hundred and Thirty-eighth street.
Forty-ninth street, between Fifth and Eighth avenues.
Forty-third street, between Seventh and Eighth avenues.
Leonard street, between Broadway and Centre street.
Fifty-fifth street, between Madison and Eighth avenues.
Forty-fourth street, between Madison and Fifth avenues.
Boston road, between Third and Tremont avenues.
Brook avenue, between Westchester avenue and One Hundred and Fifty-seventh street.
Elm street, between Duane and Worth streets.
Water street, between Corlears and East streets.
One Hundred and Sixty-fifth street, between Gerard avenue and Concourse.
One Hundred and Seventy-fourth street, between Amsterdam and Audubon avenues.
Bear Swamp road, between end of old main and Unionport road.
Edgecombe avenue, between One Hundred and Forty-seventh and One Hundred and Fifty-fifth streets.

6-inch Pipe.

One Hundred and Seventy-eighth street, between Mohegan avenue and Bryant street.
Arthur avenue, between One Hundred and Seventy-fifth street and Tremont avenue.
Arthur street, between Fourth and Sixth avenues.
Sixth avenue, between Arthur and Briggs streets.
Fourth avenue, between Arthur and Sheil streets.
Clay avenue, between One Hundred and Sixty-fourth and One Hundred and Seventieth streets.
Green avenue, between Fort Schuyler road and Long Island Sound.
Brook avenue, between One Hundred and Fifty-seventh street and Third avenue.
Columbus avenue, between Lincoln street and Bear Swamp road.
Briggs street, between White Plains road and Sixth avenue.
Fourth avenue, between Seventh and Ninth streets.
Honeywell avenue, between One Hundred and Seventy-seventh and One Hundred and Eighty-second streets.
Eastchester road, between Fourth avenue and Bronx and Pelham parkway.
Ash street, between Eastchester road and Elm street.
Park avenue East, between One Hundred and Eighty-third and One Hundred and Eighty-seventh streets.
Two Hundred and Nineteenth street, between Second avenue and White Plains road.
Third street, between Fifth avenue and a point 400 feet east of Sixth avenue.
Two Hundred and Fifteenth street, between Fifth and Sixth avenues.
Twenty-first street, between White Plains road and Fourth avenue.
Seventeenth street, between White Plains road and Second avenue.
Hill avenue, between Jefferson and Randall avenues.
One Hundred and Sixty-first street, between Boulevard Lafayette and a point 250 feet west.
One Hundred and Eighty-eighth street, between Third and Park avenues.
Briggs avenue, between One Hundred and Ninety-sixth and One Hundred and Ninety-eighth streets.
Tiffany street, between Spofford avenue and Burnett place.
Andrews avenue, between One Hundred and Eighty-third street and Fordham road.
Creston avenue, between One Hundred and Seventy-ninth street and Burnside avenue.
Aldus street, between Southern Boulevard and Hoe street.
Hoe street, between Aldus and Guttenberg streets.
North Chestnut drive, South Chestnut drive, Cedar avenue, North Oak drive, South Oak drive (Bronxwood Park).
Park avenue, between One Hundred and Eighty-seventh street and Third avenue.
Arnold avenue, between Pelham road and Alice street.
Mulford avenue, between Pelham road and Alice street.
Mayflower avenue, between Pelham road and Liberty street.
Pilgrim avenue, between Pelham road and Liberty street.
Libbey street, between Arnold and Mulford avenues.
One Hundred and Ninety-seventh street, between Bainbridge and Decatur streets.
One Hundred and Eighty-second street, between Webster and Park avenues.
One Hundred and Ninety-fourth street, between Kingsbridge road and Marion avenue.
Belmont avenue, between Tremont avenue and One Hundred and Eightieth street.
Prospect avenue, between Tremont avenue and Oakland place.
Oakland place, between Prospect and Belmont avenues.
Valentine avenue, between Two Hundredth and Two Hundred and second streets.
Two Hundred and Seventh street, between Perry avenue and Parkside place.
Bainbridge avenue, between Two Hundred and First street and Mosholu parkway.
Woodlawn road, between Webster avenue and Harlem Railroad.
One Hundred and Ninety-seventh street, between Decatur and Webster avenues.
Jennings street, between Southern Boulevard and Wilkins place.
Minford place, between Jennings street and Boston road.
Elm place, between One Hundred and Eighty-ninth street and Kingsbridge road.
(r) One Hundred and Eighty-eighth street, between Hoffman street and Beaumont avenue.
Pelham road, between Middletown road and Eastern Boulevard.
Mapes avenue, between One Hundred and Seventy-seventh and One Hundred and Eightieth streets.
Morris avenue, between Burnside avenue and One Hundred and Eighty-third street.
Beaumont avenue, between One Hundred and Eighty-seventh and One Hundred and Eighty-ninth streets.
Horton avenue (City Island), between Main street and Long Island Sound.
South Elizabeth street (City Island), between Pelham Bay and Long Island Sound.
Lyman place, between Freeman and One Hundred and Sixty-ninth streets.
Franklin avenue (City Island), between Pelham Bay and Long Island Sound.
One Hundred and Ninety-fifth street, between Marion and Webster avenues.
Classon avenue, between Westchester and McGraw avenues.
Spofford avenue, between Tiffany and Manida streets.
Daly avenue, between One Hundred and Seventy-sixth and One Hundred and Seventy-seventh streets.
Mohegan avenue, between One Hundred and Seventy-eighth and One Hundred and Eighty-second streets.
Belmont avenue, between One Hundred and Eightieth and One Hundred and Eighty-second streets.
Fairmount place, between Marmion avenue and Southern Boulevard.
Marion avenue, between One Hundred and Eighty-seventh street and Kingsbridge road.
Lyvere place, between West Farms road and Green avenue.
Lafayette avenue, between Westchester and Green avenues.
One Hundred and Seventy-ninth street, between Third avenue and Vyse street.
Elsmere place, between Marmion avenue and Southern Boulevard.
Washington avenue, between Westchester avenue and Butler place.
Butler place, between Washington and Green avenues.
Kingsbridge road, between Two Hundred and Thirty-third street and Bracken avenue.
(r) One Hundred and Seventy-sixth street, between Crotona and Prospect avenues.
Bassford avenue, between One Hundred and Eighty-fourth street and Third avenue.
One Hundred and Eighty-first street, between Third avenue and Park avenue.
One Hundred and Eighty-second street, between Third and Washington avenues.
One Hundred and Eighty-fourth street, between Third and Park avenues.
(r) One Hundred and Seventy-ninth street, between Creston and Anthony avenues.
Montgomery avenue, between One Hundred and Seventy-seventh street and Popham avenue.
Popham avenue, between Montgomery avenue and One Hundred and Seventy-sixth street.
Two Hundred and Thirty-third street, between Second avenue and White Plains road.
Nathalie avenue, between Kingsbridge road and a point 800 feet north.
One Hundred and Sixty-third street, between Stebbins and Union avenues.
St. Lawrence avenue, between Tacoma and Beacon streets.
Beacon street, between St. Lawrence avenue and Classons Point road.
Classons Point road, between Beacon street and Cornell avenue.
One Hundred and Eighty-first street, between Aqueduct and Sedgwick avenues.
(r) One Hundred and Seventy-sixth street, between Prospect avenue and Southern Boulevard.
Stebbins avenue, between One Hundred and Seventieth street and Boston road.
One Hundred and Thirty-sixth street, between Broadway and Riverside drive.
Intervale avenue, between Freeman street and Wilkins place.
Adams street, between Morris Park avenue and a point 325 feet east.
Leggett avenue, between Southern Boulevard and Dawson street.
One Hundred and Seventieth street, between Bristow street and Wilkins place.
Grant avenue, between One Hundred and Sixty-first and One Hundred and Sixty-third streets.
One Hundred and Sixty-eighth street, between Webster and Clay avenues.
One Hundred and Sixty-seventh street, between Brook and Morris avenues.
One Hundred and Sixty-first street, between Prospect and Union avenues.
Morris avenue, between One Hundred and Sixty-fifth and One Hundred and Sixty-seventh streets.
St. Paul's place, between Park and Fulton avenues.
Crotona Park South, between Fulton and Franklin avenues.
Fulton avenue, between St. Paul's place and One Hundred and Seventieth street.
Cypress avenue, between One Hundred and Thirty-eighth street and St. Mary's street.
Bassford avenue, between One Hundred and Eighty-second and One Hundred and Eighty-third streets.
Washington avenue (City Island), between Main street and Pelham Bay.
(r) Clarke place, between Jerome avenue and Concourse.
Perry avenue, between Woodlawn road and Mosholu parkway.
Harrison avenue, between Tremont avenue and a point 700 feet north.
Waterloo place, between One Hundred and Seventy-fifth and One Hundred and Seventy-sixth streets.
Home street, between West Farms road and Westchester avenue.
(r) Hull avenue, between Woodlawn road and Mosholu parkway.
Rose street, between Third and Brook avenues.
One Hundred and Seventy-third street, between Weeks avenue and Concourse.
Beck street, between Beach and Prospect avenues.

Two Hundred and Thirty-sixth street, between Kepplay and Mt. Vernon avenues.
Weeks avenue, between One Hundred and Seventy-sixth and Belmont streets.
Robbins avenue, between One Hundred and Thirty-eighth and One Hundred and Forty-third streets.
Two Hundred and Sixteenth street, between Fifth and Sixth avenues.
St. Joseph's street, between Southern Boulevard and Whitlock avenue.
Clay avenue, between Webster avenue and One Hundred and Seventy-third street.
One Hundred and Thirty-third street, between Willow and Locust avenues.
One Hundred and Seventy-eighth street, between Crotona and Clinton avenues.
Walton avenue, between One Hundred and Eighty-first street and Burnside avenue.
One Hundred and Sixty-ninth street, between Boscobel and Jerome avenues.
Walton avenue, between One Hundred and Fifty-first street and One Hundred and Sixty-seventh street.
One Hundred and Forty-sixth street, between Walton and Mott avenues.
(r) One Hundred and Eighty-eighth street, between Washington avenue and Hoffman street.
Perot street, between Sedgwick and Boston avenues.
Decatur avenue, between Mosholu Parkway South and Two Hundred and First street.
Marion avenue, between Mosholu Parkway South and Two Hundred and First street.
Vyse street, between Boston road and Tremont avenue.
One Hundred and Seventy-fourth street, between Park and Bathgate avenues.
One Hundred and Eighty-second street, between Southern Boulevard and Arthur avenue.
Beaumont avenue, between One Hundred and Eighty-third and Grote streets.
Two Hundred and Third street, between Briggs avenue and Concourse.
One Hundred and Sixty-fourth street, between Summit and Anderson avenues.
Creston avenue, between One Hundred and Eighty-first and One Hundred and Eighty-fourth streets.
One Hundred and Ninety-ninth street, between Valentine avenue and Concourse.
Grove street, between Bergen and Brook avenues.
One Hundred and Eighty-ninth street, between Third and Washington avenues.
One Hundred and Fifty-seventh street, between Third and Brook avenues.
Mosholu Parkway South, between Webster and Briggs avenues.
Perry avenue, between Two Hundredth street and Mosholu Parkway South.
Marmion avenue, between Crotona Park North and Southern Boulevard.
Mosholu Parkway North, between Webster and Perry streets.
Hull avenue, between Mosholu Parkway North and a point 300 feet north.
Perry avenue, between Mosholu Parkway North and a point 150 feet north.
Briggs avenue, between One Hundred and Ninety-fourth and One Hundred and Ninety-sixth streets.
Madison street, between a point 400 feet west of Morris Park avenue and Columbus avenue.
Park Avenue West, between One Hundred and Eighty-fourth street and Kingsbridge road.
One Hundred and Eighty-seventh street, between Webster and Park avenues.
One Hundred and Eighty-ninth street, between Webster and Third avenues.
One Hundred and Sixty-first street, between Summit and Ogden avenues.
Guerlain place, between Harrison and Thieriot avenues.
Beck street, between Longwood and Intervale avenues.
Hewitt place, between Longwood and Westchester avenues.
Concord avenue, between St. Joseph's and Kelly streets.
Villa avenue, between Southern Boulevard and Van Cortlandt avenue.
Fulton avenue, between One Hundred and Seventy-third and One Hundred and Seventy-fifth streets.
Heath avenue, between Boston and Fort Independence avenues.
Jackson avenue, between Unionport road and Garfield street.
Grant avenue, between Unionport road and Garfield street.
One Hundred and Fifty-fifth street, between Broadway and a point 350 feet west.
One Hundred and Seventy-second street, between Jerome avenue and Concourse.
Walton avenue, between One Hundred and Seventy-second and One Hundred and Seventy-sixth streets.
Brown place, between One Hundred and Thirty-fifth and One Hundred and Thirty-eighth streets.
Two Hundred and Sixth street, between Mosholu Parkway South and Concourse.
Evelyn place, between Aqueduct and Jerome avenue.
Grant avenue, between One Hundred and Sixty-third and One Hundred and Sixty-fifth streets.
Chisholm street, between Freeman and Jennings streets.

Summary, 1905.

Pipe.

Diameter.	Linear Feet Laid to December 31, 1904.	Linear Feet Laid from December 31, 1904, to December 31, 1905.	Total Linear Feet Laid to December 31, 1905.
48-inch	174,997	1,228	176,225
36-inch	265,247	.....	265,247
30-inch	43,528	1,291	44,819
24-inch	11,542	.....	11,542
20-inch	320,335	30,381	350,716
16-inch	21,225	57	21,282
12-inch	1,261,240	*a* 79,745	1,340,985
10-inch	6,629	.....	*b* 310
8-inch	1,896	2,600	4,496
6-inch	2,953,672	*c* 194,717	3,148,389
4-inch	63,754	.....	63,754
Totals	5,124,065	310,959	5,427,765
Miles	970.46	58.72	1,027.99

a Less 1,000 linear feet of 12-inch pipe abandoned.
b Less 6,319 linear feet of 10-inch pipe abandoned.
c Less 3,976 linear feet of 6-inch pipe abandoned.
Discrepancy of 1.19 miles of pipe due to the 10-inch pipe abandoned and not replaced during the year 1905.

Gate Valves.

Diameter.	Set to December 31, 1904.	Set from December 31, 1904, to December 31, 1905.	Total Set to December 31, 1905.
48-inch	44	.....	44
36-inch	83	.....	83
30-inch	32	1	33
24-inch	13	.....	13
20-inch	299	28	327
16-inch	24	1	25
12-inch	2,772	251	*a* 3,014
10-inch	17	.....	*b* 6
8-inch	108	98	206
7-inch	1	.....	1
6-inch	7,934	1,040	*c* 8,966
4-inch	264	1	265
Totals	11,591	1,420	12,983

a Less 9 12-inch stop cocks abandoned.
b Less 11 10-inch stop cocks abandoned.
c Less 8 6-inch stop cocks abandoned.

Hydrants.

Pattern.	Placed to December 31, 1904.	Placed from December 31, 1904, to December 31, 1905.	Total Placed to December 31, 1905.
Nos. 1, 2 and 3	3,415	7	*a* 3,391
Victor	131	.....	131
"A"	4,422	.....	*b* 4,418
"B"	1,702	1	*c* 1,787
Double nozzle "A"	515	4	*d* 512
Triple nozzle, N. Y. (S)	108	98	206
Double nozzle, N. Y. (S)	90	356	446
Double nozzle, N. Y. (C)	2,530	215	*e* 2,734
Single nozzle, N. Y. (C)	226	607	833
Miscellaneous	343	1	*f* 308
Totals	13,482	1,289	14,766

a Less 31 Nos. 1, 2 and 3 hydrants discontinued.
b Less 4 "A" hydrants discontinued.
c Less 16 "B" hydrants discontinued.
d Less 7 double nozzle "A" hydrants discontinued.
e Less 11 double nozzle N. Y. hydrants discontinued.
f Less 36 miscellaneous hydrants discontinued.

Repairs to hydrants, mains, stopcocks, etc., in the Borough of Manhattan and The Bronx; also the repairs made to horse-troughs and fountains owned by The City of New York and under the care of this Department; also permits issued to tap on City mains.

New hydrants set in place of those defective		983
Old hydrants repaired		11,447
New stopcocks set (old ones being defective)		87
Old stopcocks repaired		1,538
Mains repaired (leaking at joints)		978
Taps shut off at mains, service defective		1,354
Hydrants closed (left open after use)		2,462
Linear feet of pipe used in repairing mains		2,623½
Permits to tap City mains (Manhattan)	2,359	
Permits to tap City mains (The Bronx)	2,650	
		5,009
New horse-troughs set (resolutions Board of Aldermen)		11
Old horse-troughs repaired by City plumber		181
Old horse-troughs removed		5
Permits to place connections over 1 inch on City mains		138
Permits to place connections over 2 inches on City mains	105	
Permits to place connections over 3 inches on City mains	15	
Permits to place connections over 4 inches on City mains	10	
Permits to place connections over 6 inches on City mains	5	
Permits to place connections over 12 inches on City mains	3	
		138

All horse troughs have been shut off from use until April, as is customary, and all stopcocks and hydrants have been greased and salted, and dead ends of mains along the North, East, Harlem and Bronx rivers have been thoroughly blown out.

Distribution System.

BOROUGH OF MANHATTAN.

Maps and Records—Complete and accurate records and plans of the distribution system are essential to its proper management and for the speedy and intelligent planning of additions and improvements. In this respect, however, this office was found deficient. Owing to the loss of some of the earlier data or some other cause, the records and plans were incomplete, sometimes entirely lacking, and when existing, inaccurate and unreliable in many cases. Work was immediately started and is in progress to make accurate surveys from which to prepare plans on an adequate scale, showing the exact location of mains, gates and hydrants, type of the latter and, as far as possible, the date of installation of the mains. Supplementing this work a systematic record of the gates and their location is also under preparation, showing the location of the valves for shutting down the various water mains. These maps will be prepared in convenient book form and furnished to the Foremen of the various repair gangs for use. To further facilitate the operation of the gates it is proposed to permanently locate the latter on the ground by reference to a suitable plate or other permanent sign on the curb or on the nearest building, where allowed. As a part of the records of gates and hydrants, entries will be made of their condition at the time of the regular inspection of the same, as well as of any repairs needed or made.

Mains—A more modern and economical design of pipes has been adopted and a common type for all the boroughs within Greater New York is in use. The advantages of this uniformity, which exists now also in hydrants, is obvious. The plans and specifications also conform to modern requirements, and in addition to the usual tests at the foundry tests in the trench by actual pressure—first incorporated in a contract in the Borough of Brooklyn by the present Chief Engineer—have also been prescribed and are in use in Manhattan with satisfactory results.

The lack of adequate office force has prevented much progress in the study of the remodeling of the distribution system, which will afford greater and much-needed pressure both for domestic use and fire protection. Some preliminary work has been done in this direction, and it is hoped that as soon as the necessary appropriations and additions to the engineering staff are made this important work will rapidly progress. It will be necessary, as a preliminary step, to ascertain the flow in the

large mains by methods already described when discussing the water waste investigation, so as to avoid undue losses by frictional resistance and properly locate such trunk mains as may be required. It may be now generally stated, however, that the pressures are sadly deficient in the lower east side, as well as a portion of the extreme west side, in the zone bordering on the river front in both cases, and a new trunk main will be required on the east side running, say, from Chambers street upwards to between Twentieth and Twenty-first streets and branching westward, the location to be between the river front and Avenue A, as may be deemed more advantageous. Work on these mains will be begun as soon as the necessary appropriation is obtained. Work on two large important mains from the Jerome Park Station down Seventh avenue is in progress, as well as the trunk line from Central Park down Eighth and Ninth avenues, which, in addition to a re-enforcement of the general distribution system, will be a source of supply for the high pressure fire service.

Pressures—A considerable number of 6-inch mains are found in the distribution systems of Manhattan and The Bronx, and in the latter borough some 4-inch mains are also in use. These small mains are not economical in the end and do not afford satisfactory pressure either for domestic use or for fire protection. In all contracts prepared during the year 8 inches has been adopted as the minimum size for mains supplying residential districts, and the 4-inch and 6-inch mains are replaced by 8-inch or larger as speedily as strengthened by gridironing with larger laterals, the work being done so as to eliminate at the same time, by cross-connections or double mains, dead ends as far as practicable. For mains supplying hydrants 12 inches is adopted as the minimum size, unless the circumstances warrant an exception.

Reference has been made above to the inadequate pressure in many sections and the laying of additional mains to remedy these conditions. There were found at the beginning of the year recording gauges in the six repair companies, but these gauges were too few and the records therefrom were not properly filled, and in many cases were lacking. In the Borough of Brooklyn the present Chief Engineer prepared a plan to have recording gauges installed at twenty engine houses, picked out with regard to the location, so that the pressure taken at the engine house would represent that in the vicinity, the gauges to be 8-inch gauges and recording pressures up to 70 pounds. Owing to lack of men only nine of these gauges were established, at which continuous records have been kept since. I recommend that a similar plan be carried out in Manhattan and The Bronx, after the consent of the Fire Department has been obtained for the location of these pressure gauges. In case a large fire occurs in the vicinity of any of the gauges an examination of the chart shows whether the pressure was seriously reduced by the demand for water for the fire. Continuous recording gauges should also be placed at the various pipe yards, alongside of an ordinary pressure gauge. In this manner each repair yard can be instantly warned in case there is any serious trouble in the pressure, the ordinary gauge being placed so that the caulkers, laborers, etc., can determine the pressure without difficulty, whereas these men frequently have trouble in accurately reading a gauge chart. The gauges used would have a dial 8 inches in diameter.

Gates—In many cases it has been found that the gates are too far apart for quick and economical control in case of breaks or accidents. Additional gate valves are being installed, so that in case of a break in a main supplying hydrants the length thrown out of service will not be more than 500 or 600 feet in manufacturing districts or more than 800 or 900 feet on two sides of a block in other districts. As already stated, it is intended to inspect and repair these valves continuously and systematically at least once a year, keeping a record of their repairs and operation. We are also securing uniformity in the covers for the vaults of the gate valves and have taken measures to prevent the covering of these gate valves with building materials, thus rendering their operation difficult.

Hydrants—A variety of hydrants were found in use in Manhattan and The Bronx, as well as in other boroughs, many of which are antiquated types of a poor design and ineffective for fire service. A modern type of hydrant has been adopted and is now in use in the boroughs of Manhattan and The Bronx, as well as in all the other boroughs of Greater New York, which will supersede as rapidly as possible the obsolete types. Among the latter those with single outlets are particularly objectionable. Attention has been given to the systematic inspection of these hydrants, which has been sometimes neglected in the past, and it is proposed that this inspection will be continuous and rigid, and the results recorded, as in the case of the valves, gates and other portions of the distribution system. Arrangements will be made so as to distinguish, by some particular color, hydrants of good engine capacity.

Repair Gangs—The boroughs of Manhattan and The Bronx are divided into seven districts, each of which is in charge of one Repair Gang or Company, under a Foreman, who is responsible for the condition of the mains, hydrants, valves, etc., and attends to the repairs on breaks and repairs to hydrants and gates under 20 inches in diameter. There are in addition three floating gangs, two of which have charge of the repairs on mains and gates 20 inches in diameter and larger, while the remaining third gang is assigned to special work, as required.

I believe that more efficient service could be secured by remodeling the plan under which these gangs have been for many years operating. As a general measure, I would propose that the City should acquire the buildings and land occupied for headquarters and attach in each case a shop sufficient to make all minor repairs, as is done in Brooklyn, thus saving time and considerable expense in this work.

As regards the second district, which extends from Houston to Forty-second street and from river to river, this area should be divided into two sections, separated by Broadway. The location of the existing headquarters, at No. 437 West Thirty-seventh street, is too far northward; it should be more central, i. e., say between Twentieth and Twenty-second streets, on the West Side. For the new eastern section a convenient location would be at the pipe yard, Twenty-fourth street and Avenue A.

The third district extends from Forty-second street to Ninety-sixth street, with headquarters at No. 427 East Eighty-seventh street. This district should also be divided into two sections, one taking the area east of Fifth avenue and the other the area west of Fifth avenue, while the northern boundary should be extended to One Hundred and Sixteenth street. The location of the headquarters for both districts should be somewhere between Seventy-seventh and Eighty-first streets.

The fourth district extends from Ninety-sixth street to One Hundred and Seventy-third street and from river to river, with headquarters at One Hundred and Twenty-first street and Sylvan place. With the extension of the third district, the southern boundary of this district would be at One Hundred and Sixteenth street, and should extend northward therefrom, so as to cover the remainder of Manhattan Island. Although the territory is large, it does not seem at present necessary to subdivide it. The headquarters should be shifted northward and could be located at the pipe yard, One Hundred and Fortieth street and Fifth avenue.

By this rearrangement, the distances to be traveled by the men on the repair gangs would be considerably diminished and the work more efficiently executed. It would be necessary, of course, to install two additional repair gangs.

The personnel of these repair gangs was and is not yet adequate for the work, nor are the members thereof sufficiently familiar with the system in the district under their supervision. An increase in the force is imperative, as well as the selection of men well trained to the service they are to render, so that there shall be one or two men ready to close and open gates speedily in case of breaks, as well as to respond to fire alarms and aid the Fire Department in the handling of the gates. I would recommend that the Fire Department be requested to place fire alarm signals at the various headquarters of these repair gangs or companies. On the other hand, notices are and will be given to the Fire Department by this Bureau and a permanent record kept at the various headquarters of the repair gangs, as well as in the main office, of the opening and closing of valves 20 inches in diameter or larger. I also recommend and have taken preliminary steps to secure the sending of competent water works employees to second alarm fires, wherever practicable. In order to quickly repair breaks and avoid the damage done heretofore by unnecessary delay, night gangs have been organized, as previously established in the Borough of Brooklyn, which remain on duty through the night, so that immediately on report of a break the men can go from the repair gang stations to repair it, instead of, as heretofore, waiting until these men could be found, if they were found at all, at their several residences. Furthermore, telephones will be installed in the residences of the various Assistant Engineers, one of whom is daily on call through the night, so that his services may be rendered in case of emergency. Lastly, I have recommended that an Operator be kept at the main office of the Department, with whom the police and public may communicate in case of emergency, and who, in turn, can communicate either with the various repair yards, the Assistant Engineers, Chief Engineer or Commissioner.

Break on Park Avenue Main—On the night of Saturday, June 10, 1905, pursuant to a request made to this Department by Mr. F. McClusky, Superintendent of the pipe work of the Degnon Contracting Company, employees of this Department turned on the water in the 48-inch pipe in the easterly side of Park avenue, between Fortieth and Forty-second streets. We had been previously notified by Mr. Dalton of the Subway contracting firm of Norton & Dalton, that the main had been properly repaired and was ready for the pressure. We had also on file in this Department a statement signed by William Barclay Parsons, Chief Engineer of the Rapid Transit Commission, dated May 8, 1903, referring to repairs, signed Alfred Carr, in which Mr. Carr advised us that the balance of this pipe to the north end of the contract had been entirely relaid. This information was given to this Department because the water in the 48-inch main had been shut off in the year 1901 and that thereafter the main had been seriously damaged by an explosion in the Rapid Transit tunnel some time in 1902.

In turning on the water in this main, our workmen used the 30-inch gate at Third avenue and Forty-second street, opening this gate only to a small extent, about 9 inches. After the water had been turned on in the main, employees of this Department patrolled the section until about 5 o'clock on the Sunday morning following to see if any evidence of leaks or other defects might show, but no leak appeared at that time while our men were on watch.

About 3.30 p. m., on Sunday, June 11, notice was received at this Department from the police of the Twenty-third Precinct stating that a large water leak showed at Park avenue and Forty-second street. Employees of this Department proceeded to this location and judging by the large flow of water that the leak must be off of this 48-inch main, upon which the pressure had just been turned on, the water pressure in this main was thereupon shut off.

Later on, excavations were made to uncover this 48-inch main and a very careful investigation was made to determine the cause of this water leak. It was found that two of the 48-inch pipe and one of the 30-inch pipe composing this line had been badly crushed and split during the time of the construction of the Rapid Transit tunnel and had never been repaired. Also a tap hole 1⅛ inches in diameter, which was used by the rapid transit contractor, had never been plugged by the contractor using it. It was found that the cause of the crushing of the 30-inch pipe was due to the fact that in relaying the trolley tracks in Forty-second street after the rapid transit subway had been built, the tracks had been laid so that the weight of the trolley lines in Forty-second street rested upon the 30-inch main and that every time a car passed over this track the main sustained a severe blow.

The 48-inch pipe was found to be damaged due to bad construction of the timber structure supporting it. The defective timbering was promptly cut out, the tracks at Forty-second street were braced so that no weight of them could rest upon the main, the defective parts of the main were cut out and replaced by new pipe, and the water pressure was thereupon turned on in this main and a thorough and special test of the main was then made which showed that the main was then in good condition.

A protracted discussion and much correspondence took place between this Department and the Rapid Transit Commissioners, as well as the subway contractors as to the responsibility for the accident and for the payment of the necessary repairs. This lasted some time, pending which nothing was done and the street remained in an unsightly condition and the general traffic was obstructed, thus causing complaint from abutting property owners. After a full submission of the case on both sides to the Corporation Counsel, the latter ruled that the Rapid Transit Commissioners were responsible for the expenses of repairs, that they should be notified by this Department to proceed with the same, and if they failed to do so within forty-eight hours, this Department should proceed to make said repairs and render a bill for the expense thereof. The Rapid Transit Commissioners were accordingly notified, pleaded lack of funds to do the repairs, which were then done by this Bureau in the manner above stated, in accordance with the opinion of the Law Department already quoted, and bill for the same rendered.

Electrolysis—Under the direction of the Consulting Electrical Engineer of the Department, Prof. Geo. F. Sever, many tests have been already made to determine the effect of electrolysis on our pipe system, which is undoubtedly affected, but they have not yet been compiled. The work will be prosecuted so as to devise practical means of counteracting the effects of the electric current.

BOROUGH OF QUEENS.

Supply.

From an examination of the Flushing Pumping Station, it appears that an additional supply may be obtained there and arrangements are under way for putting test wells in that neighborhood in order to determine what quantity of water may be secured therefrom. The City owns property comprising what is known as Oakland lake, near the Bayside Pumping Station, but the boundaries of the property are close to the shore line. It would be advisable to obtain an additional strip of say 50 feet for purposes of protection and maintenance. It may be possible to utilize the water from this lake, which at times is very rily and possibly exposed to contamination, either by some system of filtration or by driven wells, or an infiltration gallery. A study to determine the best mode of development will be undertaken as soon as the necessary engineering force is available. The Third Ward is growing so rapidly that whatever quantity may be obtained from the pumping stations in that ward will be required for their use within a very short period of time, so that it may not prove advisable to connect the Third Ward system with the distribution system of the First Ward.

A careful investigation showed the inadvisability of attempting to further develop Stations 1 and 3 in the First Ward in the Borough of Queens. By reconstructing Station No. 2, which was destroyed in 1902, and to which reference will be made hereafter, an additional supply may be secured therefrom. In view of the reduced amount of water available, it is proposed to reconstruct this station next year.

Station No. 3 lies within the limits of the freight yard which the Pennsylvania Railroad Company proposes to build, and the Railroad Company has begun negotiations to acquire, if possible, the pumping station property.

A temporary solution of the water supply problem in the First Ward is the acquirement of the plant owned by the Citizen's Water Company. An investigation of this system and report on its value has already been made by this Bureau and is on file. When the Catskill water is available, the Borough of Queens should be supplied from that source, as there is a rapid increase in population in the territory contiguous to the pumping stations which may eventually contaminate the water from these sources. Should the water from Suffolk County be available, a speedier supply may hereafter be obtained for the relief of Queens from that source.

In addition to the revenue obtained from private consumers, the Citizens' Water Company receive at present from The City of New York about $150,000 per year for water furnished to Long Island City, and this amount will probably be increased with the consumption. The estimate made by this Department of the value of the Citizens' Water Company's property was under $1,000,000; this estimate would probably be higher to-day, with the increase in values since the report was originally made. It is evident, therefore, that the condemnation of the property, besides solving many of the perplexing questions constantly arising from the complaints of our citizens of inadequate pressure, extortionate charges, etc., would prove advisable as a business proposition.

Distribution System.

Previous to December 1, 1905, a thorough examination of the system was made in the First and Third Wards, and all hydrants, gates, etc., placed in good repair before the commencement of cold weather. During the year 1905, no complaints of inadequate service have been received at the office, and with the extensions of water mains now being made in the Third Ward, we should be enabled to reduce the cost of pumpage in that section. Owing to many changes made in the grades of streets in the First Ward of this borough, we have been compelled to lower the water mains therein, and wherever it has been possible our repair gangs have done this work, yet in several instances we have been compelled to have the work of excavating done by contract, thereby reducing the fund available for Maintenance and Repairs, The streets in which water mains have been lowered are as follows:

Webster avenue, Prospect street, Luyster street and Lockwood street. The repair gang in this Ward also laid a new 6-inch main in Moore and Lathrop streets, the pipe, etc., being supplied from our yards and the work of excavating being done by contract. With reference to the contract now being carried out for the laying of 20-inch mains in the Third Ward and 12-inch mains in the First Ward, Norton & Dalton, contractors, I would report that this work is progressing as rapidly as it can possibly be done in order to take advantage of the present good weather.

The work on the contract in the Third Ward 20-inch main has progressed so that on Friday, December 22, a point was reached at which we were enabled to make connection with the existing 12-inch circulating mains from the Bayside Pumping Station at Broadway and Cemetery lane, and at Fresh Meadow road and Cemetery lane with the 12-inch circulating main from the Flushing Pumping Station. The pressure at the Flushing Pumping Station previous to turning on the water was 100 pounds, and after the water was carefully turned on the pressure at the station dropped from 100 pounds to 75 pounds, at which point it is now maintained. The general effect of pumping this portion of the 20-inch main was to reduce the amount of friction throughout the old 12-inch main and to increase the pressure at the College Point standpipe from 42 to 48 pounds. This will reduce the cost of pumpage at the Flushing Pumping Station, and a further reduction in cost will be effected when the whole line is completed. The contractors for the work of laying additional mains in the First and Third Wards have completed arrangements for obtaining the necessary pipes and specials, and the casting of these will be proceeded with at once. The repair gangs in the different wards have been kept constantly employed and the water system is at present in good condition. At this time we are striving to secure uniformity of gates and hydrants in the system.

Samples of the water supplied in this borough have been regularly taken and transmitted to the laboratory of the Department for analysis, and reports of such analyses have been received and filed.

The following is a summary of the work done the past year by this Department, also by private water companies operating in this borough:

TABLE No. 15.

Annual Report of Work Done in the Department of Water Supply, Gas and Electricity, Borough of Queens, City of New York, for Year Ending December 31, 1905.

Kind of Work Done.	First Ward.	Third Ward.
Number of taps made	309	204
Number of taps repaired	13	1
Number of leaks repaired	55	129
Number of stop-cocks repaired	35	73
Number of hydrants repaired	644	120
Number of gate boxes repaired	18	48
Number of stop-cocks reset	35	9
Number of hydrants reset	57	49
Number of gate boxes reset	99	93
Number of hydrants removed	26	..
Number of pressures taken	518	224
Number of linear feet of main laid	8,081	11,956
Number of linear feet of water main lowered	1,510	300
Number of private connections made	7	3
Number of meters set	2	..
Number of meters repaired	16	..
Number of meter boxes repaired	15	..
Number of hydrants tested, painted, thawed out and greased	..	7,820
Number of check valves set	2	..
Number of taps closed	3	..
Number of soundings taken	15	..
Number of examinations and notifications of leaks taken	32	..
Number of times water was shut off and turned on	6	..
Number of new hydrants set	15	4
Number of new stop-cocks set	6	4
Number of new gate boxes set	8	4

Miscellaneous men at work at the Corporation yard and the different pumping stations during the year.

Statement of Lengths of Water Mains in Use December 31, 1904.

Lengths added to December 31, 1905, and total lengths in use December 31, 1905, with number of stopcocks and hydrants.

Size of Mains and Stop-cocks.	Mains in Use December 31, 1904.	Additions to December 31, 1905.	Total Mains in Use December 31, 1905.	Stop-cocks in Use December 31, 1904.	Additions to December 31, 1905.	Total in Use December 31, 1905.
	Linear Feet.	Linear Feet.	Linear Feet.			
24-inch	17,500	....	17,500	6	....	6
20-inch	17,812	11,035	28,847	9	9	18
16-inch	25,470	....	25,470	17	1	18
14-inch	7,002	....	7,002	5	....	5
12-inch	96,362	6,420	102,782	102	45	147
10-inch	31,789	....	31,789	38	4	42
8-inch	118,394	....	118,394	201	....	201
6-inch	270,400	2,582	272,982	549	46	595
4-inch	64,013	....	64,013	53	1	54
Total	648,742	20,037	668,775	980	106	1,086

Hydrants in use December 31, 1904	1,217
Additions to December 31, 1905	47
Total in use December 31, 1905	1,264

Work Completed Under Public Award During the Year 1905.

Contractor.	Ward.	Date of Contract.	Date of Completion of Work.	Cost of Work.
T. F. Tuohy & Co	3	Apr. 4, 1905	Apr. 26, 1905	$910 00
Norton & Dalton Contracting Company	3	Dec. 12, 1904	Dec. 30, 1905	44,981 00
Norton & Dalton Contracting Company	1	Dec. 12, 1904	Dec. 30, 1905	23,925 00

Contractor.	Miles of Mains Laid.	Number of Hydrants Set.	Number of Gates Set.
T. F. Tuohy & Co	0.1	1	4
Norton & Dalton Contracting Company	2.1	18	35
Norton & Dalton Contracting Company	1.3	9	57

TABLE NO. 16.

Statement of Fire Hydrants for Which the City Pays Rental to Private Water Companies.

Name of Company.	Rate.	Number In Use January 1, 1905.	Number Set In 1905.	Total.	Annual Cost.
Citizens' Water Supply Company	$25 00	100	....	100	$2,500 00
Citizens' Water Supply Company	20 00	404	76	480	9,600 00
Citizens' Water Supply Company	18 00	140	....	140	2,520 00
Citizens' Water Supply Company	15 00	....	12	12	180 00
Jamaica Water Supply Company	18 00	852	125	977	17,586 00
Queens County Water Company	20 00	294	13	307	6,140 00
Woodhaven Water Supply Company	18 00	674	38	712	12,816 00
Total	....	2,464	264	2,728	$51,342 00

Note—In addition to the above a number of hydrants have been ordered but not yet set.

BOROUGH OF RICHMOND.

Supply.

The only municipal water supply in this borough is that obtained at the Tottenville Pumping Station, which furnishes only about 250,000 gallons per day, and this meagre supply is obtained at an exceedingly high cost per million gallons delivered, amounting in some cases to over $150. It may, perhaps, be possible to further develop this station, and some preliminary investigations to that effect are under way. Owing to the contract now in force with the Hudson County Water Company, to which reference will be made hereafter, it has been deemed advisable not to make further expenditures on this plant with a view to reduce the working expenses, but to await the issue of the above contract.

Contract with Hudson County Water Company.

On May 25, 1905, the Hudson County Water Company, through its officers, Turner A. Beall, president; John R. Bland, vice-president, and G. L. Sterling, Acting Corporation Counsel, acting for the City, entered into a contract under a bond of $100,000 to furnish to The City of New York, or its certain attorneys, successors or assigns, at some point in the Borough of Richmond to be afterwards agreed upon, an ample and abundant supply of pure and wholesome water, for the uses and purposes of said Borough of Richmond, City of New York.

The supply is to be furnished within one year after the execution and delivery of the contract and the water will be delivered through two mains, each 30 inches in diameter, laid across the Kill von Kull, and delivering the water at a pressure of 60 pounds per square inch into the mains of the City, which are about to be laid, the bids for same having been opened on December 29 last; the point of intersection being located in Richmond terrace, near Van street.

Under this contract the maximum quantity of water supplied per day by the water company will be 10,000.000 gallons, and the minimum quantity will be 3,000,000 gallons per day, to be paid for as follows, namely:

For an average consumption of 3,000,000 gallons or less per day, during a period of one month, the cost shall be $210 per day.

For the first four million gallons purchased each day, $70 per million gallons.

For the fifth million gallons purchased each day, $65.

For the sixth million gallons purchased each day, $60.

For the seventh million gallons purchased each day, and for all thereafter, $55 per million gallons.

In case the water is received from New Jersey, through the Hudson County Water Company, the pressure at which it will be delivered will make it advisable to divide the island into four elevations of zones of distribution, as shown on Diagram No. 3, the low service being supplied directly by gravity. The middle service will require the construction of a pumping station at about elevation +80, which will pump into a reservoir located at a point which can later be supplied directly by gravity from the Catskill supply. The high service supply will also be pumped by this same pumping station, the water being delivered into a reservoir at about elevation +350, and the tower service will be supplied by an auxiliary pump in connection with the high service supply.

The contemplated acquirement by the City of the private water supplies in this borough, namely, the Crystal Water Company, the Staten Island Water Supply Company and the South Shore Water Company, will probably require the division of the island in a somewhat different manner, as in the buying of this property the City will acquire several existing reservoir sites which it may be advisable to keep for reservoir purposes.

Distribution System.

The present distribution system in the borough, owned by The City of New York, is located entirely in the southern end of the island, and is known principally as the Tottenville District. The water is supplied to this system entirely by the Tottenville Pumping Station, the average yield of which is about 200,000 gallons per day, at an excessive cost. The contracts, which were prepared during the Fall, and for which bids were opened on December 29, provide for the delivery of water by gravity direct into this Tottenville section, thereby eliminating the expensive pumpage now necessary.

For the purpose of supplying the various high elevations on the island the distribution system has been divided into four distinct zones, namely:

The low service zone, which will supply all areas between mean sea level and elevation 80 by gravity.

The second or middle service zone, which will supply all the areas between elevation 80 and elevation 170. This zone will be supplied from a reservoir located at an elevation of about 220 feet, and into which the water will be pumped from a station located in the low service zone, and receiving water by gravity from the Hudson County Water Company. These two zones of elevation are so laid out that when the future supply from the Catskills reaches the island they will both be supplied entirely by gravity, thus eliminating the pumpage in the middle or second service.

The third or high service zone will supply all areas between elevation 170 and elevation 300. It will receive its water from a reservoir the flow-line of which will be at an elevation of about 350 feet, and which will receive its water from motor driven pumps located at the middle service supply reservoir.

The fourth or tower service zone will supply all areas above elevation 300. This zone will receive its water from a stand-pipe, the flow-line of which will be at an elevation of about 460 feet. This stand-pipe will be supplied with water from motor driven pumps, also located in the station at the middle service zone reservoir.

The following diagram (No. 3) shows the approximate schematic arrangement of the various zones of distribution, pumping stations and reservoirs which will constitute the new water supply:

For the year ending December 31, 1905, the water mains owned by the City and supplied from the Tottenville Pumping Station have a total length of 13.55 miles; the number of hydrants connected therewith is 133, and the meters in use 369. The City paid rental to the private water companies on 1,080 hydrants, at a total yearly cost of $29,290.

Surveys were made and plans prepared for furnishing, delivering and laying water mains in Bay, Hannah and Minthorn streets, in Central avenue, Weiner place, Stuyvesant place and Richmond terrace; in Morningstar road and Richmond road; in Bridge avenue, Church street, Fresh Kills road, Gifford's lane, Old Mill road, Old Stone road and through private property by way of Yukon avenue and Alaska place; also in Amboy road, Mill road, Annadale road and Lindenwood road; in Sharrot

avenue, Huguenot avenue and Hillside avenue, and in Broadway; all in connection with the project of the introduction of water from the State of New Jersey. Four contracts were drawn up, the work advertised and bids received on December 28; three bids being received for contract No. 1, two for contract No. 2, five for contract No. 3, and five for contract No. 4. No award has been made up to December 31, 1905.

As the Fire Department and taxpayers have sent many recommendations and requests for additional mains and hydrants and will continue to send such during the present year, I deem it necessary to call your attention to the fact that there is no money in the fund for such a purpose, save that which is just sufficient to pay for the rental of hydrants set before January 1, 1906.

MECHANICAL DIVISION.

BOROUGHS OF MANHATTAN AND THE BRONX.

Ninety-eighth Street Pumping Station.

Minor repairs were made on engines Nos. 1 and 2 and on the main steam line and boilers.

On engine No. 3 general repairs were started during the last quarter of 1904 and were continued up to February 21, when they were suddenly stopped on account of the refusal of the Finance Department to pass bills for repairs involving expenditure greater than one thousand dollars. In view of the difficulty of determining beforehand the amount of expenditures to be incurred in repairing engines, the Board of Aldermen was requested to authorize the Commissioner of Water Supply, Gas and Electricity to expend an amount not to exceed $35,000 for the year for necessary repairs to engines without advertising. This authorization was granted and repairs were continued. In August it was found necessary to stop these repairs in order to adjust the bills of the Victor Heating Company, pending for work done for the same, which appeared excessive and which had been accumulating for some time. Assistant Engineer T. J. Gannon was put in charge of the Mechanical Division, and, on my recommendation, Mr. J. B. Poore was temporarily appointed Inspector of Repairs to Machinery. A detailed and accurate schedule of the work required on the various engines was made, bids were obtained for the work to be done, and repairs continued on November 26 by the Marine Engine and Machine Company, of No. 126 Liberty street, New York, who were the lowest bidders. Engine No. 3 was generally overhauled, many new parts put in and the engine thoroughly aligned. The work of repairs was practically completed at the end of the year.

One Hundred and Seventy-ninth Street Pumping Station.

Minor repairs were made on pumping engine No. 1, of the tower service. A new auxiliary 4-inch steam line from the boiler room to engines Nos. 1 and 3 was completely installed and covered. Other minor repairs were made to engines Nos. 4, 5 and 6 and to the boilers.

The repairs to engine No. 2, which were also temporarily stopped during the last quarter, owing to the reasons already given in regard to engine No. 3 at the Ninety-eighth Street Pumping Station, were continued on November 16 by the Marine Engine and Machine Company, of No. 126 Liberty street, who, as already stated, were the lowest bidders. The high pressure, intermediate pressure and low pressure cylinder heads, pistons, rods and glands, and the heads of the water cylinders, the plungers, plunger rods and the plunger rings were removed from the engine and lines were run through and the alignment between the centre line of the steam end and the centre line of the water end at each engine was found to be incorrect, the centre line of the water end being eccentric with the centre line of the steam end in each engine. This eccentricity, in each case, was compensated for by reboring and bushing the tie rod tables, thereby distributing the wear uniformly on all rubbing surfaces of the plungers and pistons. Caps were removed from pillow blocks of the main shaft, the alignment tested and the caps were scraped true and replaced. Valve spindles of the high pressure, intermediate pressure and low pressure cylinders were fitted to place and the bonnets were placed on the steam chests.

The brackets, guides, valves, etc., were reassembled and put back in place, and other important repairs were made to the auxiliary apparatus on this engine. The work, exclusive of the lagging, was practically completed at the end of the year.

On August 29, 1905, a contract was entered into between the City and the firm of Snare & Triest, of No. 143 Liberty street, New York, for furnishing materials and building monitors on the engine houses of the One Hundred and Seventy-ninth Street and Jerome Avenue Pumping Stations, and building grating platforms and stairways in the basement of engine house of the One Hundred and Seventy-ninth Street Pumping Station. In order to protect the pumping station and its machinery from the weather, a temporary weatherproof roof has been put in place, to be used during the time of erection of the ventilators and monitors. The bulk of the materials required for the installation of the ventilators and monitors has been furnished and delivered and the work of erection is now progressing.

High Bridge Pumping Station.

Minor repairs were made to the boilers and No. 1 pumping engine. The No. 2 engine was generally overhauled and repaired. As in the previous two cases, the repairs on this engine, although nearly completed, were suspended for a time pending the adjustment of old bills of the Victor Heating Company, after which they were finished before the end of the year.

This is a reserve station, so that the machinery has been regularly turned over to keep it in proper condition and to insure its readiness for regular service when needed.

Jerome Avenue Pumping Station.

Work under the contract entered into with the Henry R. Worthington Company on June 24, 1901, for furnishing and installing complete with all appurtenances two 10,000,000-gallon high duty pumping engines and three boilers, had progressed slowly and many delays had been experienced. These engines were not gotten under steam until the 24th of March, and the work of lagging had then to be postponed until the engines were properly adjusted. On September 18 and 19 and 26 to 27, respectively, capacity and duty trials of these engines were made, with the following results:

Results of Tests of Two Ten-Million Gallon Pumping Engines in Jerome Avenue Pumping Station, Borough of The Bronx, City of New York.

		No. 2	No. 3
1.	Number of engine		
2.	Date of test	Sept. 18-19, 1905	Sept. 26-27, 1905
3.	Duration of test	24 hours, 15 min.	24 hours
4.	Total number of strokes by counter during test	33,541	33,754
5.	Total number of strokes by counter during 24 hours	33,195.2	33,754
6.	Average length of stroke in inches	37.831	37.917
7.	Average piston travel in feet per min.	145.346	148.14
8.	Maximum allowable piston travel, feet per min.	150	150
9.	Safe margin on piston travel, feet per min.	4.654	1.86
10.	Total coal put on grate during test, in pounds	14,038.03	13,987.45
11.	Total coal put on grate during 24 hours, in pounds	13,893.3	13,987.45
12.	Capacity of pump (four plunger displacements) per one inch of stroke, in U. S. gallons	8.91	8.391
13.	Capacity of pump (four plunger displacements) for average length of stroke (6), per stroke, in U. S. gallons	317.44	318.161
14.	Water pumped during test, U. S. gallons	10,617,255	10,739,206
15.	Water pumped during 24 hours, U. S. gallons	10,537,490	10,739,206
16.	Water pumped during 24 hours, allowing 5 per cent slip, U. S. gallons	10,010,616	10,202,246
17.	Minimum delivery of water specified per 24 hours (allowing 5 per cent. slip), U. S. gallons	10,000,000	10,000,000
18.	Excess over requirement, in U. S. gallons	10,616	202,246
19.	Water pressure, on delivery, by gauge, at engine, in pounds, per square inch	69.285	70.033
20.	Water pressure, on delivery, by gauge, at engine, in feet of head	160.041	161.769
21.	Distance between gauge and level of water in suction tank in feet	17.32	17.759
22.	Total head pumped against, in feet	177.361	179.528
23.	Total pressure pumped against in pounds	76.783	77.721
24.	Temperature of water at suction	66.08°F	65.25°F
25.	Weight of one cubic foot of water, in pounds	62.34	62.34
	Duty Based on Plunger Work.		
26.	Work performed in 24 hours, no allowance for slip, in foot-pounds	15,574,586,623	16,066,568,063
27.	Work performed in 24 hours, allowing for 5 per cent. slip, in foot-pounds	14,795,857,292	15,263,239,660
28.	Duty, per 100 pounds of coal put on the grates (no allowance for slip), in foot-pounds	112,101,420	114,864,168
29.	Duty, per 100 pounds of coal put on the grates (allowing 5 per cent. slip), in foot-pounds	106,496,349	109,120,959
30.	Duty requirements, as per contract, per 100 pounds of coal put on grates, allowing for 5 per cent. slip, in foot-pounds	105,000,000	105,000,000
31.	Duty performed in excess of above requirement, in foot-pounds	1,496,349	4,120,959

A contract was entered into with the firm of Snare & Triest, of New York, to furnish labor and materials and cut an opening in the engine room floor, finish and build railing around same, build stairway to basement, place platforms for ready access to the water ends of the engines, to place a hood over the receiving tank, and also to place cast iron floor plates around engine beds. The major part of this work was done up to the end of the year. The work of placing the monitors not being completed, temporary roof was put in place.

There are four pumping stations in these boroughs, i. e., High Bridge, Ninety-eighth street, One Hundred and Seventy-ninth street and Jerome Park. Of these, the Ninety-eighth street and High Bridge are old installations, in which both the design and machinery are very poor, thereby making it impossible to obtain a high duty and economical operation. There are in the One Hundred and Seventy-ninth street and Jerome Park pumping stations plants more recently installed, but the design and arrangement of the boilers, engines and coal storage are such that a very large force is required to operate the station, and, furthermore, the heat losses due to long lines of steam piping and inefficient boilers are considerable.

The past records of operation of all these stations are very meagre and unsatisfactory, so that it is impossible to make any reliable comparison from year to year. In estimating the cost of pumpage, Jerome Park excepted, it has been impossible to find from the records the actual cost of the installation of these plants, and therefore we are unable to include in the cost of pumpage the charges for interest and sinking fund, which naturally belong to the cost of operation.

For the above reasons, and the pumping being divided among three stations—i. e., Ninety-eighth street, One Hundred and Seventy-ninth street and Jerome Park, the High Bridge station being merely held as a reserve station—the cost of pumping water in the Borough of Manhattan has been high as compared with that of other large cities. It is not hereby intended to criticize this subdivision of the pumping, which may have been due partly or entirely to conditions existing at the time, but it is certain that a very large saving in cost could be accomplished by concentrating the pumping at a single station. To carry out such a plan now would involve an expenditure of over one million dollars, and such an outlay would be entirely justifiable, from a business standpoint, were it not that the additional supply from the Catskill Mountains is to be available, as stated by the Board of Water Supply, within ten years. Under such conditions, the concentration of pumping above referred to would not be recommended.

Plans are under way to increase the efficiency of each of the existing stations by installing new boilers and steam lines and making important repairs on some of the engines in the Ninety-eighth and One Hundred and Seventy-ninth street pumping stations, and by remodeling the coal conveying apparatus at the latter station, as well as by installing the necessary duplicate steam pipe lines at the Jerome Park station, which is required owing to the defective layout of the boiler plant in its relation to the engines. This Bureau is also making the necessary arrangements to provide for the increased consumption up to the probable date of the incoming of the supply from the Catskill Mountains. This increase will generally be provided for at the One Hundred and Seventy-ninth street pumping station, and machinery suitable for a life of ten or fifteen years, and which will give the most economical operation for that period, will be installed. If there were sufficient mains available, it still might be advantageous to do the main pumping at Jerome Park and One Hundred and Seventy-ninth street stations, leaving the Ninety-eighth street station, as well as High Bridge station, as reserve stations, but in view of the lack of adequate main capacity to carry out this plan it may be found advantageous to replace the old low duty engines in the Ninety-eighth street station with machinery of a more improved type, taking into consideration, in selecting the latter, the restricted period during which it is expected to maintain that station.

With a view of securing greater efficiency and a more systematic management, as well as to carry out the plans for the improvement and development already outlined, the Mechanical Division of the Bureau was reorganized and put under the charge of Mr. Thomas J. Gannon, Mechanical Engineer, with Mr. John P. Reynolds, Jr., Mechanical Engineer, under him and in charge of the design and construction of new work. The amount of work accomplished under this new arrangement, and services rendered by Messrs. Gannon and Reynolds, have fully justified the reorganization of this Division.

BOROUGH OF QUEENS.

First Ward.

Pumping Station No. 1.

The necessary repairs to keep the engines and boilers in service were made and the plant is in good condition. The work of installing surface condensers, oil separators, primary feed water heaters in the main exhausts of both pumping engines, and of setting and connecting air pumps, under the contract with F. McSwegan, progressed very slowly, but was completed before the end of the year.

Pumping Station No. 2.

This station was practically destroyed by an explosion of the boilers in November, 1902, and has not been utilized since. Owing to the extreme shortage of water available for Queens, it may be advisable to rebuild it for at least temporary use.

Pumping Station No. 3.

Work of maintenance and repairs has been done during the year and the plant is in very good condition. New feed water heater and purifier has been installed and is now giving very satisfactory service.

Third Ward.

Flushing Pumping Station.

The new steam piping as laid out in connection with the new boiler installation was furnished and installed complete and covered with magnesia. Automatic damper regulators, new shaking and dumping grates and boiler feed pump were put in place and connected up. The much needed repairs on the snow pumping engine No. 1 were started up early in the year, but were held in abeyance for reasons similar to those given hereinbefore in connection with repairs to engines in the Borough of Manhattan. After due authorization from the Board of Aldermen, these repairs were continued and finally completed during the year.

The contract entered into with James A. Stevenson for building new coal house and placing a monitor on the engine house roof progressed very slowly, and the work was uncompleted at the end of the year, although the contractor was continually urged to push the work.

Work under the contract with F. McSwegan & Son, for furnishing and installing condensers, air pumps, exhaust heaters, etc., has been completed and final payment has been made.

On September 7, 1905, the duty test on the air-lift system installed at this station by the Hudson Engineering Company, under contract made with the City April 20, 1904, was conducted. The plant was practically turned over to the City early in January at the request of the Acting Chief Engineer, Mr. G. W. Birdsall, in order to overcome the shortage of water in the borough, and from this time up to the date of the test it delivered water approximately at the rate of 1,500,000 gallons per day. During this time the plant was handled by the Department employees and Department supplies were used to maintain it. The specifications covering the duty trial were very general and failed to specify the method of calculating the lift on which to figure the work done. The test, however, showed that the duty, based on the heat consumed by the engine and its auxiliaries, making due allowance for moisture and for heat available for return in the jacket water, was in excess of 30,000,000 foot pounds of work per 1,000,000 British thermal units consumed by the apparatus, as called for in the specifications. On this trial the capacity of the plant was shown to be in excess of 2,000,000 gallons per day, but during the test the apparent rise in the pond level did not account for all the water delivered, so that it was found necessary, in order to determine the effect of pumping from the wells upon the present storage, to have a second test. This was made on November 22 and 23, 1905. On this test water was delivered over the weir at the rate of 2,182,719 gallons per day. The snow pump was so regulated as to remove the water at such a rate that the net change in pond level was zero, thereby eliminating entirely the question of effect on storage. In doing this the snow pump delivered into the distribution system 2,167,296 gallons per twenty-four hours. Thus it was shown that the delivery of the plant was in excess of the requirements of the specifications.

The contract entered into with the Snow Steam Pump Works of Buffalo for furnishing and installing a 3,000,000-gallon pumping engine has been completed. Delays were experienced by a breakdown on the high pressure piston of the engine, causing the cylinders and rods to become badly scorched. During the shutdown of this engine the old No. 1 Snow pump was unable to keep the pressures normal, and the Whitestone Station, which had been shut down, was put into service. The duty trial of this engine was made on April 1, with the following results:

TABLE No. 17.

Results of a Test of a Snow Horizontal Cross-Compound, High-Duty, Crank and Flywheel Condensing Pumping Engine, at Flushing, Long Island, N. Y.

Capacity in twenty-four hours, 3,000,000 gallons, against normal head of 220 feet. Date of test, April 1, 1905; length of test, twelve hours.

1.	Diameter of plunger, inches	11
2.	Diameter of plunger rod, inches	2¾
3.	Average net area of plunger, square inches	92.06
4.	Length of stroke, inches	24
5.	Number of strokes (in twelve hours)	39,685
6.	Capacity of pump per stroke, gallons	38.26
	Delivery (Water).	
7.	Discharge head per square inch, pounds	84.05
8.	Head between suction and discharge gauges (per square inch), pounds	2.576
9.	Suction head (per square inch), pounds	2.08
10.	Total head per square inch, pounds	88.706
11.	Total head in feet	204.82
12.	Gallons delivered (in twelve hours)	1,518,348
13.	Weight water delivered, pounds	12,659,530
14.	Work done, foot pounds	2,592,924,934
	Steam Consumed (Reckoned Above Initial Temperature of Feed Water at 60 Degrees Fahrenheit).	
15.	Water from condenser (temperature 95.40 degrees Fahrenheit), pounds	17,261
16.	Water from jackets and reheater (temperature 253.79 degrees Fahrenheit), pounds	2,640
17.	Total steam furnished engine and accessories, pounds.	19,901
18.	Initial temperature of feed water, degrees Fahrenheit	60
19.	Absolute pressure of steam delivered at engine (per square inch), pounds	145.35
20.	British thermal units in one pound of steam at above pressure	1,162.42
21.	Total heat furnished to engine, British thermal units	23,133,320
22.	Correction for moisture in steam at 1 per cent., British thermal units	231,333
23.	Total heat in dry steam furnished to engine, British thermal units	22,901,987
24.	Heat in water from jackets and reheater, British thermal units	515,120
25.	Total net heat furnished to engine corrected for moisture, 1 per cent., and for heat in jacket water, British thermal units	22,386,867
26.	Heat available if water from condenser is pumped back into boiler, British thermal units	612,593
27.	Total net heat furnished to engine corrected for all returns, British thermal units	21,774,274
	Duty per 1,000,000 British Thermal Units.	
a.	Duty heat charged as per item (u), foot pounds	112,086,155
b.	Duty heat charged as per item (w), foot pounds	113,218,345
c.	Duty heat charged as per item (y), foot pounds	115,916,686
d.	Duty heat charged as per item (aa), foot pounds	119,082,038

Note—(a) is the duty based on the assumption that the steam furnished at the throttle is perfectly dry (a condition never attained in practice with saturated steam), and that the heat contained in the water from jackets, reheater, etc., is wasted. (b) is the duty based on steam containing 1 per cent. of entrained moisture. (c) is the duty based on steam containing 1 per cent. of entrained moisture and returning the jacket and reheater water to the boiler. (d) is the duty based on net heat furnished to engine after correcting for moisture and all returns to boiler.

Duty trial conducted by John W. McKay, Assistant Engineer.
Computations made by Thomas J. Gannon, Mechanical Engineer.
Approved by
I. M. DE VARONA, Chief Engineer.

Bayside Pumping Station.

Minor repairs were made to the engines and boilers in this station. A new 12-inch cast-iron sewer and drain pipe was laid under the boiler room floor, extending to the creek. The work of building the extension to the engine house and building a new boiler house and coal houses under the contract with Ryan & McFerran was completed during the year and final payment made therefor.

The station has been wired to be lighted by electricity.

Whitestone Pumping Station.

In anticipation of the well system and installation of the new 3,000,000 gallon pumping engine at the Flushing Pumping Station, it was considered no longer necessary to operate this station, and the same was shut down early in January, the working force being reduced to two enginemen and two firemen. Shortly after shutting down the station, however, a breakdown on the engine at the Flushing Pumping Station compelled starting up again and the running of same, in order to keep the pressures normal during the time required to make the necessary repairs to the new Flushing engine. After the completion of these repairs the station was again shut down until June 21, when the shortage of water made it necessary to again operate the station and continue same throughout the year.

College Point Standpipe.

The work of installing a pressure regulating device at the College Point standpipe, so as to prevent the overflowing of the standpipe during times of light consumption was completed during the year. The pressure regulating device has given very satisfactory results.

BOROUGH OF RICHMOND.

Tottenville Pumping Station.

Both engines in this station were overhauled and are now in good condition. Repairs were made to the deep well pumps, and steam radiators have been set and connected up in main engine room and in pump houses of wells Nos. 1 to 8 inclusive.

The height of the stack has been increased by 40 feet, and new shaking and dumping grates have been placed in the furnaces of the boilers.

The new coal house, work upon which was begun early in the year, is now completed.

BOROUGHS OF MANHATTAN AND THE BRONX.

Ninety-eighth Street Pumping Station.

(Quarter Ending December 31, 1905.)

Total U. S. gallons pumped	1,530,370,316
Average per day	16,634,459
Average total dynamic lift, in feet	90.046
Million gallons pumped against a head of 1 foot	137,803.725474
Total coal, or equivalent, put on grates, pounds	2,153,940
Total foot-pounds of work	1,149,283,070,453
Duty in foot-pounds of work, per 100 pounds of coal	53,357,246

Cost of Pumping.

Station payroll	$6,340 83
Fuel	5,029 06
Repairs	1,533 18
Supplies and materials	262 41
Oils, waste, packing, etc.	165 61
	$13,331 09
Cost of lifting one million gallons against a head of 1 foot	$0 0967

One Hundred and Seventy-ninth Street Pumping Station.

(Quarter Ending December 31, 1905.)

Engines Nos. 1 and 3—	
Total U. S. gallons pumped	752,512,741
Average per day	8,179,486
Average total dynamic lift, in feet	227.501
Million gallons pumped against a head of 1 foot	171,197.401,090
Total foot-pounds of work	1,427,786,325.091
Engines Nos. 2, 4, 5 and 6—	
Total U. S. gallons pumped	3,163,854,888
Average per day	34,389,727
Average total dynamic lift, in feet	107.563
Million gallons pumped against a head of 1 foot	340,313.723,319
Total foot-pounds of work	2,650,684,826,382
Total U. S. gallons pumped (all engines)	3,916,367,629
Average per day (all engines)	42,569,213
Million gallons pumped against a head of 1 foot (all engines)	511,511.124,409
Total coal, or equivalent, put on grates, pounds	5,202,632
Total foot-pounds of work (all engines)	4,266,002.777.586
Duty in foot-pounds per 100 pounds of coal	81,985,988

Cost of Pumping.

Station payroll	$10,167 86
Fuel	11,735 46
Repairs	1,571 43
Oils, waste, packing, etc.	800 10
Supplies and materials	355 50
	$24,630 35
Cost of lifting one million gallons against a head of 1 foot	$0 048

Jerome Avenue Pumping Station.

(Quarter Ending December 31, 1905.)

Total U. S. gallons pumped	856,525,023
Average per day	9,216,013
Average total dynamic lift, in feet	178.707
Million gallons pumped against a head of 1 foot	153,067.017.285
Total coal, or equivalent, put on grates, pounds	1,556,266
Total foot-pounds of work	1,276,578,924,191
Duty in foot-pounds of work per 100 pounds of coal	82,028,324

Cost of Pumping.

Station payroll	$4,378 40
Fuel	4,307 51
Repairs	31 26
Supplies and materials	581 13
Oils, waste, packing, etc.	256 06
	$9,554 36
Cost of lifting one million gallons against a head of 1 foot	$0 062

BOROUGH OF QUEENS.

First Ward—Pumping Station No. 1.

(Quarter Ending December 31, 1905.)

Total U. S. gallons pumped	54,957,640
Average per day	597,365
Average total dynamic lift, in feet	183.04
Million gallons pumped against a head of 1 foot	10,059.446425
Total coal, or equivalent, put on grates, pounds	340,020
Total foot-pounds of work	83,895,783,400
Duty in foot-pounds of work per 100 pounds of coal	24,673,800

Cost of Pumping.

Station payroll	$2,070 86
Fuel	1,059 49
Repairs	138 96
Supplies and materials	108 42
Oils, waste, packing, etc.	43 16
	$3,420 89
Cost of lifting one million gallons against a head of 1 foot	$0.340

First Ward—Pumping Station No. 3.

(Quarter Ending December 31, 1905.)

Total U. S. gallons pumped	53,783,400
Average per day	584,602
Average total dynamic lift, in feet	192.49

Million gallons pumped against a head of 1 foot	10,352.766700
Total coal, or equivalent, put on grates, pounds	284,845
Total foot-pounds of work	86,342,076,800
Duty in foot-pounds of work per 100 pounds of coal	30,312,000

Cost of Pumping.

Station payroll	$1,860 85
Fuel	887 57
Repairs	118 80
Supplies and materials	86 64
Oils, waste, packing, etc	73 08
	$3,026 94
Cost of lifting one million gallons against a head of 1 foot	$0.2924

The material falling off in the pumpage at this station was due to the general high back pressure on the pumps making it necessary to operate them at a much reduced speed.

Third Ward—Flushing Pumping Station.

(Quarter Ending December 31, 1905.)

Total U. S. gallons pumped	141,791,253
Average per day	1,541,209
Average total dynamic lift in feet	221.12
Million gallons pumped against a head of 1 foot	31,352.881860
Total coal, or equivalent, put on grates, pounds	929,237
Total foot-pounds of work	262,341,177,987
Duty in foot-pounds of work per 100 pounds of coal	28,231,901

Cost of Pumping.

Station payroll	$2,070 86
Fuel	2,895 51
Repairs	225 03
Supplies and materials	94 53
Oils, waste, packing, etc	171 67
	$5,457 60
Cost of lifting one million gallons against a head of 1 foot	$0.1741

Third Ward—Bayside Pumping Station.

(Quarter Ending December 31, 1905.)

Total U. S. gallons pumped	76,723,800
Average per day	883,954
Average total dynamic lift, in feet	194.19
Million gallons pumped against a head of 1 foot	14,898.985200
Total coal, or equivalent, put on grates, pounds	343,566
Total foot-pounds of work	124,100,546,800
Duty in foot-pounds of work per 100 pounds of coal	36,121,100

Cost of Pumping.

Station payroll	$1,860 86
Fuel	1,070 52
Repairs	289 74
Supplies and materials	38 91
Oils, waste, packing, etc	65 23
	$3,325 26
Cost of lifting one million gallons against a head of 1 foot	$0.2225

Third Ward—Whitestone Pumping Station.

(Quarter Ending December 31, 1905.)

Total U. S. gallons pumped	22,583,097
Average per day	245,467
Average total dynamic lift, in feet	183.58
Million gallons pumped against a head of 1 foot	4,145.805
Total coal, or equivalent, put on grates, pounds	185,212
Total foot-pounds of work	34,534,555,208
Duty in foot-pounds of work per 100 pounds of coal	18,646,000

Cost of Pumping.

Station payroll	$1,678 16
Fuel	577 70
Repairs	82 53
Supplies and materials	90 45
Oils, waste, packing, etc	35 86
	$2,464 70
Cost of lifting one million gallons against a head of 1 foot	$0.5945
Pounds of coal per million gallon feet	44.67

BOROUGH OF RICHMOND.

Tottenville Pumping Station.

(Quarter Ending December 31, 1905.)

Total U. S. gallons pumped	18,267,900
Average per day	198,564
Average total dynamic lift in feet	150.5
Million gallons pumped against a head of 1 foot	2,749.322
Total coal, or equivalent, put on grates, pounds	316,505
Gallons of water pumped against a head of 1 foot per pound of coal	8,687
Pounds of coal per million gallons pumped against a head of 1 foot	115.12
Total foot-pounds of work	22,915,596,400
Duty in foot-pounds of work per 100 pounds of coal	7,240,200

Cost of Pumping.

Station payroll	$1,402 95
Fuel	840 68
Repairs	428 81
Maintenance and supplies	237 98
	$2,910 42
Cost of lifting one million gallons against a head of 1 foot	$1.0589

BOROUGHS OF MANHATTAN AND THE BRONX.

Pumping Station—Ninety-eighth Street.

Pumping Record.

1905.	Coal Used, Duty, Etc.: U. S. Gallons Pumped.	Average Total Dynamic Lift, in Feet.	Total Coal or Equivalent: In Pounds.	Total Coal or Equivalent: In Gross Tons.	Pounds of Coal Used per Million Gallon-foot.	Quality of Coal.	Cost of Coal per Gross Ton.	Average Duty in Foot-lbs. per 100 Lbs. of Coal.	Cost of Pumpage: Cost of Pumping Based On— Cost of Coal Used.	Materials, Supplies and Repairs.	Salaries.	Interest and Sinking Fund.	Total Cost of Pumping.	Cost of Pumping One Foot, Million Gallons.
January, February, March	1,508,961,509	82.53	2,041,570	911.4	16.39	*.....	$5 44	50,892,435	$4,959 09	$1,615 27	$5,561 32	†....	$12,135 68	$0 0974
April, May, June	1,515,085,323	88.96	1,899,020	847.8	14.09	*.....	5 23	59,206,926	4,439 34	1,724 30	6,371 43	†....	12,535 06	0 0930
July, August, September	1,531,378,578	92.31	1,993,180	889.8	14.10	*.....	5 23	59,113,945	4,660 45	2,721 00	6,523 70	†....	13,905 15	0 0980
October, November, December	1,530,370,316	90.05	2,153,240	961.1	15.63	*.....	5 23	53,357,246	5,029 06	1,961 20	6,340 83	†....	13,331 09	0 0967
Total.....	6,085,795,726	.....	8,087,710	3,610.1	.....	*.....	.....	.....	$19,087 94	$8,021 77	$24,797 27	†....	$51,906 98	.....
Average	.....	88.4	.....	.....	15.02	*.....	$5 29	55,527,400	.....	.....	.....	†....	.....	$0 0964
Average per day for year	16,673 400	.....	22,158	9.89	.....	*.....	.....	.....	$52 29	$21 98	$67 94	†....	$142 21	.....

* Anthracite, egg size.
† Not included in cost of pumping.

BOROUGH OF MANHATTAN.

One Hundred and Seventy-ninth Street Pumping Station.

Pumping Record.

1905.	Coal Used, Duty, Etc.: Engines Nos. 1 and 3. Gallons Pumped.	Engines Nos. 1 and 3. Average Total Dynamic Lift in Feet.	Engines Nos. 2, 4, 5 and 6. Gallons Pumped.	Engines Nos. 2, 4, 5 and 6. Average Total Dynamic Lift in Feet.	Total All Engines. Gallons Pumped.	Total All Engines. Average Total Dynamic Lift in Feet.	Total Coal or Equivalent In: Pounds.	Total Coal or Equivalent In: Gross Tons.	Pounds of Coal Used Per Million Gallon Foot.	Average Duty in Foot Pounds Per 100 Lbs. of Coal.
January, February, March	369,136,150	222.4	3,387,855,819	110.9	3,756,991,969	121.9	4,678,278	2,088.52	10.21	81,662,888
April, May, June	605,848,512	225.9	2,909,709,717	108.1	3,515,558,229	128.4	4,531,945	2,023.19	10.04	83,069,910
July, August, September	360,504,268	225.1	3,014,345,525	105.5	3,374,849,793	118.3	4,167,914	1,860.67	10.44	79,806,740
October, November, December	752,512,741	227.5	3,163,854,888	107.6	3,916,367,629	130.6	5,202,632	2,322.60	10.17	81,985,988
Total.....	2,088,001,671	.....	12,475,765,949	.....	14,563,767,620	.....	18,580,769	8,294.98	.....	.....
Average	.....	225.7	.....	108.1	.....	125.0	.....	.....	10.21	.....
Average per day for year.....	5,720,558	.....	34,180,181	.....	39,900,734	.....	50,906.2	22.73	.....	81,683,264

1905.	Quality of Coal.	Cost of Coal Per Gross Ton.	Cost of Pumpage. Cost of Pumping Based On: Cost of Coal Used.	Materials, Supplies and Repairs.	Salaries.	Interest and Sinking Fund.	Total Cost of Pumping.	Cost of Pumping Per Million Gallon Foot.
January, February, March	*.....	$5 20	$10,869 34	$2,232 28	$8,654 05	†.....	$21,755 67	$0.0475
April, May, June	*.....	5 05	10,217 11	2,061 49	9,153 76	†.....	21,432 36	0.0474
July, August, September	*.....	5 05	9,402 41	2,349 65	9,772 75	†.....	21,524 81	0.0539
October, November, December	*.....	5 05	11,735 46	2,727 03	10,167 86	†.....	24,630 35	0.0480
Total	*.....	.....	$42,224 32	$9,370 45	$37,748 42	†.....	$89,343 19	.....
Average	*.....	$5 09	.....	.....	.....	†.....	.....	$0.049
Average per day for year	*.....	.....	$115 68	$25 67	$103 42	†.....	$244 78	.....

*Anthracite, egg size.

†Not included in cost of pumping.

BOROUGHS OF MANHATTAN AND THE BRONX.

Pumping Station—Jerome Avenue.

Pumping Record.

1905.	Coal Used, Duty, Etc.: U. S. Gallons Pumped.	Average Total Dynamic Lift, in Feet.	Total Coal or Equivalent. In Pounds.	In Gross Tons.	Pounds of Coal Used per Million Gallon-foot.	Quality of Coal.	Cost of Coal per Gross Ton.	Average Duty in Foot-lbs. per 100 Lbs. of Coal.	Cost of Pumpage. Cost of Pumping Based On—: Cost of Coal Used.	Materials, Supplies and Repairs.	Salaries.	Interest and Sinking Fund.	Total Cost of Pumping.	Cost of Pumping One Foot, Million Gallons.
January, February, March	Station not in operation.				.....	*.....	.....	.....	.....	.....	.....	†....	.....	.....
April, May, June	767,092,087	171.82	1,570,250	701.0	11.91	*.....	$6 20	69,996,206	$4,346 20	$1,314 73	$4,142 85	†....	$9,803 78	$0 0744
July, August, September	851,224,525	171.12	1,502,173	670.6	10.31	*.....	6 20	80,858,781	4,157 78	1,002 69	4,880 12	†....	10,040 59	0 0689
October, November, December	856,525,023	178.71	1,556,266	694.8	10.17	*.....	6 20	82,028,324	4,307 51	868 45	4,378 40	†....	9,554 36	0 062
Total	2,474,841,635	.....	4,628,689	2066.4	.....	*.....	.....	.....	$12,811 49	$3,185 87	$13,401 37	†....	$29,398 73	.....
Average	.....	173.9	.....	.....	10.75	*.....	$6 20	.....	.....	.....	.....	†....	.....	$0 0682
Average per day for nine months	8,999,424	.....	16,831	7.51	.....	*.....	.....	77,511,208	$46 59	$11 58	$48 73	†....	$106 90	.....

*Anthracite, egg size.

†Not included in cost of pumping.

BOROUGH OF QUEENS.

Pumping Station No. 1.

Pumping Record.

1905.	Coal Used, Duty, Etc.: U. S. Gallons Pumped.	Average Total Dynamic Lift, in Feet.	Total Coal or Equivalent. In Pounds.	In Gross Tons.	Pounds of Coal Used per Million Gallon-foot.	Quality of Coal.	Cost of Coal per Gross Ton.	Average Duty in Foot-lbs. per 100 Lbs. of Coal.	Cost of Pumpage. Cost of Pumping Based On—: Cost of Coal Used.	Materials, Supplies and Repairs.	Salaries.	Interest and Sinking Fund.	Total Cost of Pumping.	Cost of Pumping One Foot, Million Gallons.
January, February, March	51,272,453	189.65	350,885	156.6	36.08	*.....	$5 67	23,120,837	$888 73	$314 58	$1,767 60	†....	$2,970 91	$0 3055
April, May, June	63,268,916	176.93	374,400	167.1	33.45	*.....	6 98	24,936,000	1,166 64	310 92	1,994 46	†....	3,472 02	0 3101
July, August, September	39,098,939	195.27	296,295	132.3	38.81	*.....	6 98	21,464,500	923 27	313 20	2,007 37	†....	3,243 84	0 4249
October, November, December	54,957,640	183.04	340.020	151.8	33.80	*.....	6 98	21,490,287	1,059 49	290 54	2,070 86	†....	3,420 89	0 3400
Total	208,597,948	.....	1,361,600	607.8	.....	*.....	.....	.....	$4,038 13	$1,129 24	$7,840 29	†....	$13,107 66	.....
Average	.....	185.10	.....	.....	35.26	*.....	$6 644	23,647,259	.....	.....	.....	†....	.....	$0 3394
Average per day for year	571,501	.....	3730.4	1.67	.....	*.....	.....	.....	$11 06	$3 37	$21 48	†....	$35 91	.....

*Anthracite, egg size.

†Not included in cost of pumping.

BOROUGH OF QUEENS.

Pumping Station, No. 3—First Ward.

Pumping Record.

1905.	Coal Used, Duty, Etc.: U. S. Gallons Pumped.	Average Total Dynamic Lift, in Feet.	Total Coal or Equivalent. In Pounds.	In Gross Tons.	Pounds of Coal Used per Million Gallon-foot.	Quality of Coal.	Cost of Coal per Gross Ton.	Average Duty in Foot-lbs. per 100 Lbs. of Coal.	Cost of Pumpage. Cost of Pumping Based On—: Cost of Coal Used.	Materials, Supplies and Repairs.	Salaries.	Interest and Sinking Fund.	Total Cost of Pumping.	Cost of Pumping One Foot, Million Gallons.
January, February, March	73,461,500	170.65	352,204	157.2	28.01	*.....	$5 67	29,685,000	$891 51	$288 31	$1,672 05	†....	$2,851 87	$0 2275
April, May, June	63,950,426	159.46	308,475	137.7	30.25	*.....	6 98	27,537,228	961 22	320 87	1,766 96	†....	3,049 05	0 2981
July, August, September	56,707,500	179.05	289,473	129.2	28.59	*.....	6 98	29,250,000	901 91	292 46	1,777 37	†....	2,971 74	0 2927

1905.	Coal Used, Duty, Etc.								Cost of Pumpage.					
									Cost of Pumping Based On—					
	U. S. Gallons Pumped.	Average Total Dynamic Lift, in Feet.	Total Coal or Equivalent. In Pounds.	Total Coal or Equivalent. In Gross Tons.	Pounds of Coal Used per Million Gallon-foot.	Quality of Coal.	Cost of Coal per Gross Ton.	Average Duty in Foot-lbs. per 100 Lbs. of Coal.	Cost of Coal Used.	Materials, Supplies and Repairs.	Salaries.	Interest and Sinking Fund.	Total Cost of Pumping.	Cost of Pumping One Foot, Million Gallons.
October ..... November ..... December	53,783,400	192.49	284,845	127.1	27.51	*.....	6 98	30,312,000	887 57	278 52	1,860 85	†....	3,026 94	0 2924
Total.....	247,902,826	.....	1,234,997	551.2	.....	*.....	.....	.....	$3,642 21	$1,180 16	$7,077 23	†....	$11,899 60	.....
Average	.....	175.41	.....	.....	28.59	*.....	$6 65	.....	.....	.....	.....	†....	.....	$0 2752
Ave. per day for year.	679,185	.....	3383.6	1.51	.....	*.....	.....	29,191,100	$9 98	$3 23	$19 39	†....	$32 60	.....

*Anthracite, egg size.

†Not included in cost of pumping.

BOROUGH OF QUEENS.

Pumping Station—Flushing.

Pumping Record.

1905.	Coal Used, Duty, Etc.								Cost of Pumpage.					
									Cost of Pumping Based On—					
	U. S. Gallons Pumped.	Average Total Dynamic Lift, in Feet.	Total Coal or Equivalent. In Pounds.	Total Coal or Equivalent. In Gross Tons.	Pounds of Coal Used per Million Gallon-foot.	Quality of Coal.	Cost of Coal per Gross Ton.	Average Duty in Foot-lbs. per 100 Lbs. of Coal.	Cost of Coal Used.	Materials, Supplies and Repairs.	Salaries.	Interest and Sinking Fund.	Total Cost of Pumping.	Cost of Pumping One Foot, Million Gallons.
January ..... February ..... March	113,205,917	188.91	532,282	237.65	24.89	*.....	$5 67	33,510,485	$1,347 33	$430 43	$1,882 05	†....	$3,659 81	$0 1712
April ..... May ..... June	155,312,147	216.46	784,683	350.32	23.34	*.....	6 98	35,688,955	2,445 09	674 51	2,033 61	†....	5,153 21	0 1532
July ..... August ..... September	141,568,733	229.52	882,378	393.88	27.12	*.....	6 98	30,711,375	2,749 49	499 91	1,987 37	†....	5,236 77	0 1612
October ..... November ..... December	141,791,253	221.12	929,237	414.83	29.63	*.....	6 98	28,231,901	2,895 51	491 23	2,070 86	†....	5,457 60	0 1741
Total.....	551,878,050	.....	3,128,580	1396.68	.....	*.....	.....	.....	$9,437 42	$2,096 08	$7,973 89	†....	$19,507 39	.....
Average	.....	215.35	.....	.....	26.29	*.....	$6 76	31,681,895	.....	.....	.....	†....	.....	$0 164
Ave. per day for year.	1,511,994	.....	8,571	3.83	.....	*.....	.....	.....	$25 86	$5 74	$21 85	†....	$53 45	.....

*Anthracite, egg size.

†Not included in cost of pumping.

BOROUGH OF QUEENS.

Pumping Station—Bayside.

Pumping Record.

1905.	Coal Used, Duty, Etc.								Cost of Pumpage.					
									Cost of Pumping Based On—					
	U. S. Gallons Pumped.	Average Total Dynamic Lift, in Feet.	Total Coal or Equivalent. In Pounds.	Total Coal or Equivalent. In Gross Tons.	Pounds of Coal Used per Million Gallon-foot.	Quality of Coal.	Cost of Coal per Gross Ton.	Average Duty in Foot-lbs. per 100 Lbs. of Coal.	Cost of Coal Used.	Materials, Supplies and Repairs.	Salaries.	Interest and Sinking Fund.	Total Cost of Pumping.	Cost of Pumping One Foot, Million Gallons.
January ..... February ..... March	123,699,600	191.24	539,900	241.03	22.78	*.....	$5 67	36,542,634	$1,367 18	$417 99	$1,672 05	†....	$3,457 22	$0 1461
April ..... May ..... June	90,274,000	204.59	438,800	195.89	23.76	*.....	6 98	35,061,090	1,367 31	418 53	1,766 97	†....	3,552 81	0 1923
July ..... August ..... September	79,359,000	202.93	420,200	187.59	26.09	*.....	6 98	31,925,000	1,309 37	398 46	1,777 37	†....	3,485 20	0 2164
October ..... November ..... December	76,723,800	194.19	343,566	153.37	23.06	*.....	6 98	36,121,100	1,070 52	393 88	1,860 86	†....	3,325 26	0 2225
Total.....	370,056,400	.....	1,742,466	777.88	.....	*.....	.....	.....	$5,114 38	$1,628 85	$7,077 25	†....	$13,820 49	.....
Average	.....	197.62	.....	.....	23.83	*.....	$6 57	34,972,921	.....	.....	.....	†....	.....	$0 1889
Average per day for year	1,013,853	.....	4773.9	2.13	.....	*.....	.....	.....	$14 01	$4 46	$19 39	†....	$37 86	.....

* Anthracite, egg size.

† Not included in cost of pumping.

BOROUGH OF QUEENS.

Pumping Station—Whitestone.

Pumping Record.

1905.	Coal Used, Duty, Etc.								Cost of Pumpage.					
									Cost of Pumping Based On—					
	U. S. Gallons Pumped.	Average Total Dynamic Lift, in Feet.	Total Coal or Equivalent. In Pounds.	Total Coal or Equivalent. In Gross Tons.	Pounds of Coal Used per Million Gallon-foot.	Quality of Coal.	Cost of Coal per Gross Ton.	Average Duty in Foot-lbs. per 100 Lbs. of Coal.	Cost of Coal Used.	Materials, Supplies and Repairs.	Salaries.	Interest and Sinking Fund.	Total Cost of Pumping.	Cost of Pumping One Foot, Million Gallons.
January ..... February ..... March	12,758,057	177.15	156,799	70.0	69.38	*.....	$5 67	12,025,600	$399 22	$214 42	$943 28	†....	$1,556 92	$0 6889
April ..... May ..... June	1,528,317	184.30	19,615	8.75	84.67	*.....	6 98	11,961,800	61 08	178 07	416 16	†....	655 31	2 326
July ..... August ..... September	35,851,775	190.06	264,506	118.08	38.82	*.....	6 98	21,484,800	824 22	212 81	1,594 67	†....	2,631 70	0 3862
October ..... November ..... December	22,583,097	183.58	185,212	82.64	44.67	*.....	6 98	18,646,000	577 70	208 84	1,678 16	†....	2,464 70	0 5945
Total.....	72,721,246	.....	626,132	279.5	46.37	*.....	....	.....	$1,862 22	$814 14	$4,632 27	†....	$7,308 63	.....
Average	.....	185.66	.....	.....	.....	*.....	$6 66	17,977,900	.....	.....	.....	†....	.....	$0 5413
Average per day for year	199,236	.....	17,1.54	0.77	.....	*.....	....	.....	$5 10	$2 23	$12 69	†....	$20 02	.....

*Anthracite, egg size.

†Not included in cost of pumping.

BOROUGH OF RICHMOND.

Pumping Station—Tottenville.

Pumping Record.

1905.	Coal Used, Duty, Etc. U. S. Gallons Pumped.	Average Total Dynamic Lift, in Feet.	Total Coal or Equivalent. In Pounds.	In Gross Tons.	Pounds of Coal Used per Million Gallon-foot.	Quality of Coal.	Cost of Coal per Gross Ton.	Average Duty in Foot-lbs. per 100 Lbs. of Coal.	Cost of Pumpage. Cost of Pumping Based On— Cost of Coal Used.	Materials, Supplies and Repairs.	Salaries.	Interest and Sinking Fund.	Total Cost of Pumping.	Cost of Pumping One Foot, Million Gallons.
January			99,277	44.32	.....	*.....	$3 92							
February	16,390,600	145.5	238,373	106.41	146.4	†.....	5 95	5,694,516	$806 88	$664 79	$1,350 55	‡....	$2,822 22	$1 224
March			337,650	150.73	.....	†.....	$5 35							
April, May, June	18,653,150	147.4	327,850	146.36	119.2	†.....	5 95	6,990,046	870 80	665 49	1,457 20	‡....	2,993 49	1 088
July, August, September	22,664,550	150.1	324,587	144.90	95.41	†.....	5 95	8,735,800	862 16	667 63	1,433 34	‡....	2,963 13	0 8691
October, November, December	18,267,900	150.5	316,505	141.29	115.12	†.....	5 95	7,240,200	840 68	666 79	1,402 95	‡....	2,910 42	1 0589
Total....	75,976,200	.....	1,306,592	583.28	.....	†.....	.....	.....	$3,380 52	$2,664 70	$5,644 04	‡....	$11,689 26	.....
Average	.....	147.5	.....	.....	116.6	†.....	$5.795	7,149,500	.....	.....	.....	‡....	.....	$1.043
Average per day for year	208,154	.....	3,579.7	1.598	.....	†.....	.....	.....	$9 26	$7 30	$15 46	‡....	$32 02	.....

* Anthracite, pea size. † Anthracite, egg size. ‡ Not included in cost of pumping.

Summary of Total Annual Pumpage and Cost, 1905, Boroughs of Manhattan, The Bronx, Queens and Richmond.

Station.	Total United States Gallons Pumped During Year.	Average United States Gallons Pumped Per Day.	Average Total Dynamic Lift in Feet.	Million Gallons Pumped Against 1 Foot Head.	Total Foot Pounds of Work Done.	Coal or Equivalent Used. In Pounds.	In Gross Tons.	Average Duty. In Gallons of Water Pumped Against 1 Foot Head Per Pound Coal.	In Pounds of Coal Used per Million Gallons Pumped Against 1 Foot Head.	In Foot Pounds per 100 Pounds of Coal.
Boroughs of Manhattan and The Bronx.										
98th Street.....	6,085,795,726	16,673,400	88.4	538,483.37	4.490,886,646,286	8,087,710	3610.1	66,580	15.02	55,527,400
179th Street { High Service.....	12,475,765,949	34,180,181	108.1	Average 1,348,741.93	3,929,793,707,598	18,580,769	8294.98	97,953	10.21	81,683,264
179th Street { Tower Service.....	2,088,001,671	5,720,558	225.7	Average 125.0 471,294.07	11,060,053,347,101					
*Jerome Avenue.....	2,474,841,635	8,999,424	173.9	430,530.32	3,589,429,860,215	4,628,689	2066.4	93,013	10.75	77,511,208
Total	23,124,404,981	65,573,563	.....	2,789,049.69	23,070,163,561,200	31,297,168	13971.5	.....	.....	.....
Average	.....	.....	120.61	.....	.....	.....	.....	89,115	11.221	73,713,262
Average per day.....	.....	.....	.....	.....	.....	89,895	40.13	.....	.....	.....
Borough of Queens.										
First Ward—										
Station No. 1.....	208,597,948	571,501	185.10	38,612.50	321,981,077,088	1,361,600	607.8	28,358	35.26	23,647,259
Station No. 3.....	247,902,826	679,185	175.41	43,239.98	360,510,344,833	1,234,997	551.2	35,012	28.59	29,191,100
Third Ward—										
Flushing	551,878,050	1,511,994	215.35	118,841.67	991,747,041,572	3,128,580	1396.7	37,986	26.29	31,681,895
Bayside	370,056,400	1,013,853	197.62	73,128.77	609,391,262,900	1,742,466	777.9	41,969	23.83	34,972,921
Whitestone	72,721,246	199,236	185.66	13,501.56	112,565,555,618	626,132	279.5	21,564	46.37	17,977,900
Total	1,451,156,470	3,975,769	.....	287,324.49	2,396,195,282,011	8,093,775	3613.1	.....	.....	.....
Average	.....	.....	198.00	.....	.....	.....	.....	35,499	28.169	29,605,410
Average per day.....	.....	.....	.....	.....	.....	22,175	9.90	.....	.....	.....
Borough of Richmond.										
Tottenville	75,976,200	208,154	147.5	11,207.59	93,415,241,000	1,306,592	583.3	8,577	116.6	7,149,500
Average per day.....	.....	.....	.....	.....	.....	3579.7	1.60	.....	.....	.....
All Boroughs.										
Total	24,651,537,651	69,757,486	.....	3,087,581.77	25,559,774,084,211	40,697,535	18167.9	.....	.....	.....
Average	.....	.....	125.25	.....	.....	.....	.....	75,886	13.18	62,804,231
Average per day.....	.....	.....	.....	.....	.....	115,650	51.63	.....	.....	.....

* Jerome Avenue Pumping Station was in regular operation only from April 1 to December 31.

Station.	Quality of Coal.	Cost of Pumping, Based on: Average Cost of Coal per Gross Ton.	Total Cost of Coal Used.	Repairs.	Supplies and Maintenance.	Salaries.	†Total Cost of Pumpage.	†Average Cost of Pumping One Million Gallons Against Head of 1 Foot, Based on: Total Cost.	Cost of Coal Used.	Cost of Repairs.	Cost of Supplies and Maintenance.	Salaries.	†Cost of One Million Gallons Delivered into Distribution System.
Boroughs of Manhattan and The Bronx.													
98th Street.....	*....	$5 29	$19,087 94	$5,569 74	$2,452 03	$24,797 27	$51,906 98	$0 096	$0 0354	$0 0103	$0 0046	$0 0461	$8 529
179th Street { High Service..	*....	5 09	42,224 32	5,050 35	4,320 10	37,748 42	89,343 19	0 049	0 0232	0 0028	0 0023	0 0207	6 135
179th Street { Tower Service.	*....												

Station.	Quality of Coal.	Cost of Pumping, Based on: Average Cost of Coal per Gross Ton.	Total Cost of Coal Used.	Repairs.	Supplies and Maintenance.	Salaries.	†Total Cost of Pumpage.	†Average Cost of Pumping One Million Gallons Against Head of 1 Foot, Based on: Total Cost.	Cost of Coal Used.	Cost of Repairs.	Cost of Supplies and Maintenance.	Salaries.	†Cost of One Million Gallons Delivered into Distribution System.
‡Jerome Avenue	*	6 20	12,811 49	31 26	3,154 61	13,401 37	29,398 73	0 068	0 0297	0 0000	0 0073	0 0311	11 879
Total	*	.....	$74,123 75	$10,651 35	$9,926 74	$75,947 06	$170,648 90	.....	.....	.....	.....	.....	.....
Average	*	$5 305	.....	.....	.....	.....	.....	$0 0612	$0 0266	$0 0038	$0 0036	$0 0272	$7 379
Average per day	*	.....	$214 56	$29 21	$30 02	$220 09	$493 88	.....	.....	.....	.....	.....	.....
Borough of Queens.													
First Ward—													
Station No. 1	*	$6 64	$4,038 13	$567 42	$661 82	$7,840 29	$13,107 66	$0 3394	$0 1045	$0 0147	$0 0171	$0 2031	$62 837
Station No. 3	*	6 65	3,642 21	473 58	706 58	7,077 23	11,899 60	0 275	0 0842	0 0110	0 0163	0 1637	48 001
Third Ward—													
Flushing	*	6 76	9,437 42	869 55	1,226 53	7,973 89	19,507 39	0 164	0 0794	0 0073	0 0103	0 0671	35 347
Bayside	*	6 57	5,114 38	1,201 59	427 27	7,077 25	13,820 49	0 189	0 0699	0 0164	0 0058	0 0968	37 346
Whitestone	*	6 66	1,862 22	319 50	494 64	4,632 27	7,308 63	0 541	0 1379	0 0237	0 0366	0 3431	100 501
Total	*	.....	$24,094 36	$3,431 64	$3,516 84	$34,600 93	$65,643 77	.....	.....	.....	.....	.....	.....
Average	*	$6 669	.....	.....	.....	.....	.....	$0 2285	$0 0839	$0 0119	$0 0122	$0 1204	$45 236
Average per day	*	.....	$66 01	$9 40	$9 63	$94 80	$179 84	.....	.....	.....	.....	.....	.....
Borough of Richmond.													
Tottenville	*	$5 87	$3,380 56	$1,715 25	$949 46	$5,644 04	$11,689 26	$1 043	$0 3016	$0 1530	$0 0847	$0 5036	$153 88
Average per day	*	.....	$9 26	$4 70	$2 60	$15 46	$32 02	.....	.....	.....	.....	.....	.....
All Boroughs.													
Total	*	.....	$101,598 67	$15,798 24	$14,393 04	$116,192 03	$247,981 93	.....	.....	.....	.....	.....	.....
Average	*	$5 592	.....	.....	.....	.....	.....	$0 0803	$0 0329	$0 0051	$0 0047	$0 0376	$10 06
Average per day	*	.....	$289 83	$43 31	$42 25	$330 35	$705 74	.....	.....	.....	.....	.....	.....

* Anthracite, egg size.
‡ Jerome Avenue Pumping Station was in regular operation only from April 1 to December 31.

† The cost of pumpage does not include the charges for interest and Sinking Fund.

High Pressure Fire Service.

When, on February 1, while holding the position of Chief Engineer of the Borough of Brooklyn, I was directed by the Commissioner of the Department to assume charge also as Chief Engineer of the Boroughs of Manhattan, The Bronx, Queens and Richmond, I received special directions to spare no efforts to prepare as speedily as possible plans for and complete the installation of the high pressure fire system in the Borough of Manhattan. By the end of the first quarter, the design of all the main features of the whole high pressure fire system had been completed and the preparation of the contracts and specifications for the various portions of the work was actively under way. The work has progressed actively since then, so that all the more important contracts for construction have been awarded by the end of the year, i. e., for furnishing and installing hydrants, furnishing and laying high pressure mains, pumps and motors, etc. A description of the plans so outlined may be of interest.

Area to Be Protected.

This is shown on the attached diagram, No. 4, from which it will be seen that the boundary mains are laid, on the north, through Twenty-third street; on the east, through Broadway to Fourteenth street, through Fourteenth street to Third avenue, down Third avenue to the Bowery, down the Bowery to Chambers street, through Chambers street, on the south, to West street, and, on the west, through West street. If we allowed a zone of 600 feet in width beyond the limits of the mains, the protected area therefore would be approximately: West Twenty-fifth street, from the North river to Fourth avenue, Fourth avenue to East Fifteenth street. East Fifteenth street to Second avenue, Second avenue to East Houston street, East Houston street to Forsyth street, Forsyth street to East Broadway, Catherine street from East Broadway to the East River, East river to Dover street, Dover street, Frankfort street and Park place, from the East river to the North river, and North river, from Park place to West Twenty-fifth street. This district was selected, after consultation with the Fire Department, as that in which the fire losses were the greatest and which more urgently needed fire protection. The plans have been prepared so that the system may be readily extended southerly to the Battery, easterly as far as the East river, and, if necessary hereafter, northerly as far as Fifty-ninth street, by the simple extension of the mains and probably the erection of a third pumping station. This Bureau would recommend the extension to the Battery and easterly as far as the East river as soon as the sections now under contract are completed and put into service. For convenience in handling the work and to facilitate the early advertisement of a portion of it, the system was divided into three sections, i. e.:

The southerly section, extending from Chambers street to Spring street.
The middle section, extending from Spring street to Eleventh street.
The northerly section, extending from Eleventh street to Twenty-third street.

Water Required.

The general impression that an enormous quantity of water is used for fire purposes is erroneous, as shown by the following table furnished us by the Fire Department, giving the amounts used for fire purposes in the Boroughs of Manhattan and Brooklyn for the years 1900, 1901, 1902, 1903 and 1904, i. e.:

Water Used, Borough of Manhattan.

1900. 60,258,679 gallons, of which 27,955,325 gallons were river water.
1901. 99,228,572 gallons, of which 69,552,105 gallons were river water.
1902. 49,032,542 gallons, of which 16,136,150 gallons were river water.
1903. 80,342,443 gallons, of which 17,920,000 gallons were river water.
1904. 81,191,779 gallons, of which 23,721,059 gallons were river water.

Average for the above five years, 74,010,803 gallons, of which 31,056,928 gallons were river water.

Daily average for the above five years, 117,000 gallons.

Water Used, Borough of Brooklyn.

1900. 50,126,363 gallons, of which 22,584,630 gallons were river water.
1901. 64,038,745 gallons, of which 36,948,130 gallons were river water.
1902. 38,827,222 gallons, of which 13,797,420 gallons were river water.
1903. 22,691,120 gallons, of which 4,368,750 gallons were river water.
1904. 42,844,391 gallons, of which 17,355,710 gallons were river water.

Average for the above five years, 43,705,568 gallons, of which 19,010,928 gallons were river water.

Daily average for the above five years, 67,000 gallons.

The above figures are much higher than those I find in a previous memoranda furnished to my predecessor, and would seem to be rather larger than the actual quantities used. Adopting them, however, it will be seen that the highest amount given in the above table—i. e., that for 1901— is, in round numbers, 99,000,000 gallons, including about 69,500,000 gallons of river water, leaving 29,500,000 gallons for fresh water. Even if this quantity be made 100,000,000 gallons per year, by comparing it with the average daily consumption of about 300,000,000 gallons, it will be seen that the total amount used during a year for fire purposes would be only about one-third (⅓) of the amount used for all purposes in twenty-four hours, forming, therefore, an insignificant percentage of the total consumption. The quantity needed for fire purposes may therefore be entirely neglected as a factor in determining the water supply required for the City.

The difficulty in affording adequate fire protection has not been the lack of water, but the lack of means to concentrate the requisite amount at the scene of the fire. The amount of water in the distributing reservoirs at the dryest periods has been and is always a great many times in excess of the quantity that would be required for fire purposes for an entire year, and the adequacy of the fresh water supply for fire purposes need not, therefore, be further discussed.

The capacity of each of the proposed pumping stations supplying this system will be for the present 15,000 gallons per minute, or a capacity for the combined stations of 43,000,000 gallons per day, and, by the installation of the three additional units, for which provision is made in each station, this capacity can be increased to 24,000 gallons per minute at each station, or a combined capacity for both stations of, in round numbers, 69,000,000 gallons per day.

At 43,000,000 gallons per day, the capacity of the two stations would be about two-thirds of the total amount of fresh water used in Manhattan for fire purposes during the year 1903, in which, according to the figures of the Fire Department above given, the largest amount of fresh water was used by that Department, and with the capacity increased to 69,000,000 gallons the daily capacity of the stations would be larger than the total amount of fresh water used for fire purposes during the said year of 1903. When developed to 69,000,000 gallons per day, the capacity of the two stations now to be installed would be about seven-tenths of the total amount of both fresh and salt water used for fire purposes in the year 1901, when the largest amount of water of the given five years was used, the quantity having been then much greater than that of any of the other five years and exceeding the average by about 25 per cent—i. e., 250 gallons per minue. A change in these premises would, obviously, make a corresponding one in the above figures, without affecting, however, the general result.

With the two stations now to be built, and the motors and pumps to be installed, the total capacity of these stations would exceed that of all the fire engines in the Borough of Manhattan working under normal conditions, and would be equivalent to approximately two-thirds of the combined capacity of all the fire engines in the Boroughs of Manhattan, The Bronx and Brooklyn working under said normal conditions. These comparisons, it must be understood, are made assuming that the engines work on one line of 2½-inch hose, say 500 feet long, and under a pressure of, say, 200 pounds, and with the capacities printed in the official blank forms of reports of the Fire Department. It should furthermore be remembered that provision is made for the installation of still another pumping station, if required.

It is pertinent and may be of interest to compare the amount of water that may be discharged from these pumping stations with that required at the five largest fires which The City of New York has experienced since 1900. The location and duration of these fires and amount of water used in each have been officially furnished by the Fire Department for the Boroughs of Manhattan, The Bronx and Brooklyn, and are as follows:

BOROUGHS OF MANHATTAN AND THE BRONX.

October 29, 1900—Tarrant fire, Nos. 276 to 280 Greenwich street, of 22 hours duration; amount of water used, 330,000 gallons.

January 31, 1901—Wicks fire, Nos. 538 to 544 First avenue, 10 hours duration; amount of water used, 150,000 gallons.

February 22, 1902—Seventy-first Regiment Armory, east side of Fourth avenue, between Thirty-third and Thirty-fourth streets, 61 hours duration; amount of water used, 90,000 gallons.

December 21, 1903—Nos. 188 to 194 Mott street, 106 hours duration; amount of water used, 1,590,000 gallons.

March 26, 1904—No. 61 Broadway to Nos. 39 and 41 Trinity place; 5 hours duration; 75,000 gallons of water used.

BOROUGH OF BROOKLYN.

April 9, 1900—Eight one-story, twelve two-story, two three-story lumber yard fire, south side Newtown creek; 7 hours duration; amount of water used, 105,000 gallons.

April 30, 1901—Nos. 558 to 578 Flushing avenue, Brooklyn Rapid Transit car sheds; 3 hours duration; amount of water used, 45,000 gallons.

May 2, 1902—Nos. 239 to 245 Willoughby street, five-story brick, 120 by 150 feet, Freeborn G. Smith Piano Manufactory, storage; 3 hours duration; amount of water used, 45,000 gallons.

November 30, 1903—Nos. 176 to 194 Montague street, 100 by 275 feet, Academy of Music; 2 hours duration; amount of water used, 30,000 gallons.

February 19, 1904—Two two-story brick and frame, two-story brick, four-story brick, eight five-story brick, Messrs. F. W. Devoe and C. T. Reynolds Company; 3½ hours duration; amount of water used, 52,500 gallons.

It will be noticed that the largest fire recorded in the table is that at the premises of Nos. 188 to 194 Mott street, the duration of which is given as 106 hours and during which the Fire Department states that 1,590,000 gallons of water were used. *The supply from our stations during that length of time, even at the smaller capacity of 43,000,000 gallons, would have been nearly 200,000,000 gallons of water.

We have reason to feel confident that the High Pressure Fire System, as designed, has an adequate capacity to prevent a large conflagration by stopping the fire at its inception.

Pumping Stations.

(See Diagrams Nos. 4, 7 and 8.)

The plans provide for two stations to be built at present, with a possible third station if the operation or extension of the system makes it advisable to increase the available supply. One station is to be located on the northeast corner of Gansevoort and West streets, and the other is to be located on the northwest corner of Oliver and South streets. These two stations are both outside of the limits of districts in which the fire risk is at all hazardous. A conflagration could not practically affect either station and certainly could not affect both stations.

The supply of fresh water for the Oliver street station would come from the following mains: 30-inch main on West Broadway, 20-inch main on Church street, 24-inch main on Broadway, 36-inch main on Lafayette street and Centre street, 36-inch main on Mott street, New Bowery and Madison street, 36-inch main on Orchard street and 24-inch main on Essex street. These mains would be connected to the station through a 24-inch main on Oliver street and a 24-inch main on Chambers street. The 36-inch main on Orchard street and the 24-inch main on Essex street would connect to the supply mains for the stations through the 20-inch main on East Broadway.

We will thus have two 20-inch, one 24-inch, one 30-inch, and two 36-inch mains supplying this station, thus giving an abundant supply of fresh water.

An auxiliary salt water suction supply, which will consist of two 36-inch pipes about 140 feet long, will bring the salt water from the East river to a suction chamber located directly in front of the pumping station. This suction will be so constructed that the pipes will always be below mean low water, thus insuring a supply at all times and avoiding the possibility of a break in the suction caused by air getting into the suction lines. On the river end of this suction there will be constructed heavy bulkhead screens, and in the suction chamber will be constructed two sets of bronze screens which will be readily accessible for cleaning. From the suction chamber there will be taken two 30-inch flanged mains to the duplicate set of suction mains in the pumping station proper. The vacuum in these 30-inch pipes will always be maintained by automatic electric vacuum pumps located on the pump room floor of the station.

At the Gansevoort street station the fresh water supply will be derived from a 20-inch connection on Tenth street, coming off the 48-inch main on Fifth avenue, a 20-inch main on Seventh avenue, a 48-inch main on Eighth avenue, to be laid, and a 24-inch main on Ninth avenue and Hudson street. These mains will be cross-connected by a 36-inch main with two 24-inch mains leading from Hudson street to the station. In addition to these mains, there is a 20-inch and 36-inch main on Fifth avenue, which would be indirectly connected.

This station is therefore supplied from fresh water mains of ample capacity.

The salt water suction lines, as designed for this station, are practically identical with those for the Oliver street station, except that the 36-inch lines from the North river to the station are about 650 feet long.

The location of the stations near the northern and southern limits of the district to be protected at present has advantages in providing for a supply for the future extensions to the north and south of the area proposed at present.

The stations themselves are to be entirely of fireproof construction, no wood being used in any way. The buildings are of sufficient size to give room for eight pumping units at each station, the present installation to consist of five units. The capacity of each station could therefore be increased from 15,000 gallons per minute to 24,000 gallons per minute, without any change in the buildings or mains.

Motors and Pumps.

(See Diagrams Nos. 7 and 8.)

The pumping units will consist of centrifugal pumps driven by electric motors, the pump and motor being supported on one bed.

The pumps are the Allis-Chalmers six-stage centrifugal pumps, and the motors are the Bullock 800 horse power, 6,300 volts, 68 ampere, 3 phase, 25 cycle, 4 poles, and will run at a speed of 735 revolutions per minute.

The pumps are designed with a special care as to strength and ability to resist corrosion. Each stage of the pump is designed to give a pressure of 50 pounds per square inch, thus making the combined pressure of the six stages 300 pounds per square inch, which will be the maximum working pressure of the station. These pumps are unquestionably the simplest type of machine on the market for pumping water, either against a low or high head, and this simplicity was the deciding factor in the selection of this type of machinery.

The pump being directly connected to the motor, the simple operation of a switch on the main switchboard would throw the machine into instant service and give a full pressure in about a minute's time. While a relief valve would be provided for additional precaution, the pumps nevertheless would practically take care of themselves, as they churn water when the pressure rises to the maximum pressure for which they are designed and no damage would result from carelessness on the part of an employee in not properly setting the relief valve.

Venturi Meters.

Venturi meters, with automatic recording apparatus, are to be installed in the two 24-inch main discharges from the pumping stations, and a 12-inch Venturi meter with a recording apparatus is interposed between the fresh water supply and the discharge mains, with a proper check valve, so as to keep the distribution system under the full Croton pressure when the pumping machinery is at rest. With these Venturi meters in service it will be possible at all times to have an exact check on the efficiency of the stations.

Source of Electric Current.

(See Diagram No. 6.)

The electric current necessary to run the stations will be furnished by the New York Edison Company, at a pressure of 6,600 volts. This company has the following steam generating and distributing stations:

1. Nos. 53 to 57 Duane street, extending to Pearl street, 7,600 kilowatts rated.
2. Nos. 115 and 119 East Twelfth street, 1,700 kilowatts rated.
3. Nos. 45 and 47 West Twenty-sixth street, extending to Twenty-seventh street, 4,000 kilowatts rated.
4. One Hundred and Fortieth street and Ryder avenue, Borough of The Bronx, 4,000 kilowatts rated.
5. The Waterside station No. 1, occupying the entire block between First avenue and East river and Thirty-eighth and Thirty-ninth streets.
6. The Waterside station No. 2, occupying the entire block between First avenue and East river and Thirty-ninth and Fortieth streets. (This is in course of construction.)

These stations are also partially equipped with rotary converters and storage batteries, so that in case of a breakdown to the machines the storage batteries and converters can be put into use.

The total installation of the Waterside stations, Nos. 1 and 2, are as follows:

	H. P., Boilers.	H. P., Engines.	K. W., Generators.
Total in actual use in Waterside Station No. 1	60,200	87,550	66,700
Being installed in Waterside Station No. 1	12,000	60,000	30,000
Total after complete installation	72,200	147,550	96,700
To be installed in Waterside Station No. 2	62,400	150,000	100,000
Total of both	134,600	297,550	196,700

In addition to this power the company has feeders connecting with the Brooklyn Edison Company, so that they can be called upon for additional current, if required.

The following substations are supplied by current transmitted from the Waterside stations:

1. No. 11 Broadway (Bowling Green).
2. Nos. 39 to 43 Gold street.
3. No. 200 Lafayette street.
4. Nos. 96 and 98 Vandam street.
5. No. 152 Clinton street.
6. No. 32 Horatio street.
7. No. 452 West Twenty-seventh street.
8. Nos. 117 and 119 West Thirty-ninth street.
9. Nos. 118 to 122 West Fifty-third street.
10. No. 123 East Eighty-third street.
11. No. 211 East Eighty-fourth street.
12. No. 128 East One Hundred and Twenty-first street.
13. No. 258 West One Hundred and Twenty-fourth street.
14. Nos. 44 and 46 West Twenty-seventh street.
15. Nos. 167 and 169 West One Hundred and Seventh street.
16. No. 100 Water street and No. 134 Pearl street (in course of erection).
17. Nos. 151 and 153 East Thirty-ninth street (in course of erection).
18. Nos. 155 and 157 East Sixtieth street (in course of erection).

All of these substations are, with the exception of the Bowling Green plant, the property of the New York Edison Company, and each is equipped with rotary converters and storage batteries, and is fully equipped as a permanent centre of supply.

The storage battery system at present in the sub-stations and generating stations aggregates 31 batteries installed at present and 4 in the course of installation, having a capacity of 4,000 amperes each per hour, at 135 volts, thus giving a reserving capacity, if all generating ceased, of over 124,000 ampere hours, at 135 volts at present installed, and 16,000 ampere hours, at 135 volts, in the course of installation. As the total amount of current that can be used in both stations when working under full capacity would not exceed 6,500 kilowatts, it will be seen that there is an enormous reserve in the Edison system.

Each station will have two 250,000 C. M., 3 phase cables laid in ducts, running directly from the main generating station of the Edison Company. In addition to these feeders there will be two independent reserve feeders running from each pumping station to sub-stations of the Edison Electric Company. Under these conditions it would certainly seem a physical impossibility for any interruption of the power supply.

Contract Prices.

Contracts were prepared and proposals were duly advertised for, and bids were opened on October 25, 1905, for furnishing, constructing and installing five (5) electrically driven pumps, with all appliances complete, for high pressure fire service, in a pumping station to be erected on the northwest corner of Oliver and South streets, and the same equipment for the pumping station to be erected on the northeast corner of Gansevoort and West streets.

On each of these contracts the Allis-Chalmers Company were the lowest bidder, the price bid for the work under each contract being $119,635.50. The contracts were each awarded to the Allis-Chalmers Company on December 18, 1905.

The following is a summary of the bids received:

* N. B.—In an extract from this annual report published by the "Engineering News" these data about the operation of and amount of water used at the largest fires were included, and a correspondent pointed out the fact that in nearly all, if not in all, cases the quantities given are merely the product of the number of hours' duration of the fire by 15,000 gallons, thus leading to the assumption throughout that only one standard stream at low pressure was used on an average in the case of every fire, regardless of its character or duration. The attention of the Chief Engineer of this Department was called to the matter, and as this result is certainly extraordinary we wrote to the Fire Commissioner for such explanatory statement or correction, if any, as he might deem advisable, and received in reply a communication transmitting report from the Chief of the Fire Department in which he states that he had no corrections or other statements to make in relation to the matter, the information given being as correct as could possibly be approximated.

TABLE No. 18.

Canvass of Bids for Pumping Machinery, Borough of Manhattan, City of New York. Bids Opened October 25, 1905.

Gansevoort and West Streets Station.

Bidder's Name and Address.	Item "A." 2,500 Cubic Yards of Excavation.		Item "B." 350 Cubic Yards of Concrete.		Item "C." 4,000 Linear Feet of Piling.		Item "D." 30,000 Pounds of Metal.		Item "E." Pump and Electrical Equipment.	Total.
	Price.	Amount.	Price.	Amount.	Price.	Amount.	Price.	Amount.	Lump Sum.	
Allis-Chalmers Company, Milwaukee, Wis.	$1 00	$2,500 00	$6 75	$2,362 50	$0 30	$1,200 00	$0 03½	$1,050 00	$112,523 00	$119,635 50
Camden Iron Works, Camden, N. J.	2 00	5,000 00	9 00	3,150 00	40	1,600 00	03½	1,050 00	109,048 00	119,848 00
Johnson Livingston, Jr., & Co., New York City, N. Y.	2 00	5,000 00	8 00	2,800 00	28	1,120 00	03½	1,050 00	114,987 00	124,957 00
D'Olier, New York City, N. Y.	3 00	7,500 00	8 00	2,800 00	35	1,400 00	03½	1,050 00	113,746 00	126,496 00

Oliver and South Streets Station.

Bidder's Name and Address.	Item "A." 2,500 Cubic Yards of Excavation. Price.	Amount.	Item "B." 350 Cubic Yards of Concrete. Price.	Amount.	Item "C." 4,000 Linear Feet of Piling. Price.	Amount.	Item "D." 30,000 Pounds of Metal. Price.	Amount.	Item "E." Pump and Electrical Equipment. Lump Sum.	Total.
Allis-Chalmers Company, Milwaukee, Wis.	$1 00	$2,500 00	$6 75	$2,362 50	$0 30	$1,200 00	$0 03½	$1,050 00	$112,523 00	$119,635 50
Camden Iron Works, Camden, N. J.....	2 00	5,000 00	9 00	3,150 00	40	1,600 00	03½	1,050 00	109,048 00	119,848 00
Johnson Livingston, Jr., & Co., New York City, N. Y.....	2 00	5,000 00	8 00	2,800 00	28	1,120 00	03½	1,050 00	114,987 00	124,957 00
D'Olier, New York City, N. Y.....	4 00	10,000 00	8 00	2,800 00	35	1,400 00	03½	1,050 00	115,820 00	131,070 00

DISTRIBUTION SYSTEM.

Mains.

Diagram No. 4 shows the size and location of the distribution mains adopted and is practically self-explanatory. It will be seen that the general scheme is to have two 24-inch discharge mains leading from each station. These mains bound almost the entire area to be protected and run from one station to the other. Sixteen-inch and 12-inch mains are to run in streets parallel and intersecting these mains and they are cross-connected at frequent intervals by 20-inch mains. The 12-inch mains are only used for lateral branches and are not depended upon as arteries for carrying the supply. These mains, together with the 16-inch mains are connected at short intervals with 20-inch mains, so that the water only has to travel a short distance through a main smaller than 20 inches before it reaches the hydrant from which it is to be drawn.

All mains are cross-connected at the points of intersection, so as to obtain the most perfect circulation possible. With this cross-connection and with the gates located at the end of every block, except for the very large mains where the gates are spaced, about two blocks apart, it is possible to repair a break in any single block without affecting any hydrants except those located on the block in question.

This system makes it practically impossible for any break in a main to appreciably affect the supply or pressure.

Careful computation of the frictional losses in the mains shows that the full capacity of both stations can be delivered in any section within the area at present proposed with a pressure on the base of the hydrant of about 250 pounds per square inch. These computations were based on the pipe formulas for friction in cast-iron pipes of Flammant and checked by Darcy's formulæ, both of which are considered reliable by hydraulic engineers.

Both pumping stations can deliver their full capacity at Broadway and Spring street with a pressure at the base of the hydrant of over 250 pounds per square inch, assuming a pressure at the engines of 300 pounds per square inch. The computations show that the full capacity of the Oliver Street Station could be delivered at Twenty-third street and Broadway at a pressure of not less than 250 pounds per square inch at the base of the hydrant.

If this system be extended to Forty-second street, which is about the highest point of the downtown section of the City, the pressure from the Oliver Street Station would be not less than 220 pounds per square inch, and at Fifty-ninth street would not be less than 215 pounds per square inch. If we assume 15 pounds as a loss through the hydrant and a length of 3-inch hose of 300 feet with a 1¼-inch smooth nozzle, the streams from hydrants at Twenty-third street would each give about 550 gallons per minute and would rise vertically to an extreme height of 220 feet. At Forty-second street, under the same conditions, the delivery per stream would be about 520 gallons per minute and the extreme vertical height of the stream would be about 205 feet. At Fifty-ninth street, under the same conditions, the delivery per stream would be about 515 gallons per minute, and the extreme vertical height of the stream about 200 feet.

These figures are based on the assumption that the Oliver Street Station is delivering its full capacity of 15,000 gallons per minute in the vicinity of the point mentioned, and it therefore would be possible to obtain between twenty-five and thirty streams of a size and force equal to those given above. With the Gansevoort Street Station in service the number of streams would be doubled.

Under the proposed plan the hydrants are always within 400 feet of any building in the district, and there are sufficient hydrants so that if any block were on fire sixty streams of 500 gallons per minute each, or the full capacity of both stations, could be concentrated on a block with a length of hose not exceeding from 400 to 500 feet, assuming the use of 3-inch hose and 1¼-inch nozzles. This affords adequate protection.

In the case of West Seventeenth, West Eighteenth, West Nineteenth, West Twentieth, West Twenty-first and West Twenty-second streets, between Seventh and Eighth avenues, no fire mains have been provided, because the character of the buildings in that neighborhood is such that a fire could readily be controlled with ordinary fire engines. The value of the existing buildings is slight, and as the old buildings are replaced by more valuable structures 12-inch mains will be placed in these districts, as shown in the same streets east of Seventh avenue.

It may be well to note that the statement made before as to the concentration of sixty streams on any particular block must not be applied therefore to the small area covered by the streets above mentioned, between Seventh and Tenth avenues, and the general statements made in regard to the area to be protected by the high pressure fire system are likewise inapplicable to this small area.

In case of an extension of the system to the Battery, and with the Oliver Street Station out of service, the full capacity of the Gansevoort Street Station could be concentrated at the Battery with a pressure at the base of the hydrant of not less than 255 pounds per square inch. It will thus be seen that either station could break down without crippling the system, although, of course, the capacity would be reduced by one-half. It has, however, been previously shown that with the stations located as they are and the pumping plant divided into so many units, it would be practically impossible for any station to completely break down.

The layout of the mains at the station, both for suction and delivery, would be on the loop system, i. e., the supply could be taken from either one of two mains and discharge from one of two mains or through both. The gates, of course, would be placed so as to control the discharge from each unit and from each main. With such a system even the breakdown of one of the discharge mains at the station would only slightly reduce the pressure at the fire and would not affect the capacity of the station, as the pumps would be capable of forcing their full capacity through the short length of a single 24-inch main that would be necessary under conditions created by such an accident.

The mains are to be of cast-iron, bell and spigot pipe, with the following thicknesses:

Size of Pipe.	Thickness, in Inches.	Unit Tensile Strain with 300 Pounds Pressure.	Factor of Safety.
24-inch	1⅜	1,920	10.4
20-inch	1⅜	2,000	10.0
16-inch	1¼	1,920	10.4
12-inch	1	1,800	11.1
*8-inch	⅞	1,371	14.6

* Only used for hydrant branches.

The special castings for the large 3-way and 4-way branches, where they are weakened by the area cut out of the branches, are to be made of steel and a very large factor of safety provided. The other specials are made of cast-iron and are also designed with a very large factor of safety. The joints are of special form, designed to meet the requirements of the high pressure. They are deep, double lead grooves, in both spigot end and the hub end of the pipe. Tests made with the ordinary 12-inch lead joint showed that it held up to 750 pounds per square inch, which was the highest test pressure which we could obtain at the time, and with the grooves joined, it would not seem possible that any difficulty could be experienced.

The contract provides a maximum leakage allowable for each linear foot of joint and a test pressure of 450 pounds per square inch. This leakage being measured by pumping through a meter for a period of ten minutes.

The pipe and steel castings are to be tested to a pressure of 650 pounds per square inch, at the foundry. This, together with the test in the field, should as near as possible absolutely guarantee that the mains and appurtenances will be capable of safely withstanding the working pressure, which is about one-half of the foundry test pressure and about 70 per cent. of the field test pressure.

As under normal conditions there will be little flow, or no flow, in the mains, they are to be laid so that the outside top will be at least 5 feet below the surface of the street or about one and one-half feet below frost line. Where it is necessary to bring the mains closer to the surface, special arrangement will be made to prevent freezing, and during the winter months water will be slowly pumped at frequent intervals from one station to the other, so as to change the water in the mains.

Gates.

The gates or stop-cocks are to be of cast-iron, and no gate larger than 20 inches in diameter will be used in the system. All gates 12 inches and larger in diameter are fitted with by-passes, so as to relieve the pressure on the disc; and for the 24-inch mains, 20 by 24 inch reducers are to be used with the 20-inch gates. The stems of the gates are to be of nickel steel, in order to combine extreme strength with freedom from corrosion, and all their working and bearing parts are to be of bronze composition.

All of the gates, except those on the 6-inch blow off connections, will have bell ends.

As previously stated, these gates are to be placed approximately every block, except on the very large mains, thus avoiding the cutting out of more than one block in case of any break in the mains.

Contract Prices.

It had been the purpose of the Chief Engineer to receive bids separately for the three sections. Bids, however, were opened November 22, 1905, for the distribution system, with the three districts combined in one contract and with a time limit of 250 working days. There were only two bids received, the lower of which amounted to $3,597,965. This bid was higher than the amount allowed in the appropriation and was deemed entirely too high by the Chief Engineer, who therefore advised the rejection of bids and the readvertisement, dividing the work into three contracts, as originally intended, and allowing somewhat more time for the completion of the same.

On December 22, 1905, bids were again opened, under the revised specifications, and resulted in the receipt of seven bids for the Southern Section, six bids for the Middle Section, and eight bids for the Northern Section.

The Continental Asphalt Paving Company was the lowest bidder on all three sections. Their total bid for all three sections combined amounted to a total of $2,824,282.75, which was $53,922.25 under the estimated cost and $773,682.25 below the low figure submitted one month earlier. The contract was awarded to the Continental Asphalt Paving Company on December 29, 1905.

Hydrants.

Under the specifications for hydrants, the more important requirements are that the main valve shall be so designed that the pressure of water will tend to close it, that bronze shall be used for all metal parts of the valves and valve seats; that no movable iron part shall come in contact with cast iron; that there shall be four (4) nozzles, one 4½ inches in diameter and three 2½ inches in diameter, the sizes of these outlets being afterwards altered, as detailed further on; that all outlets shall be controlled by independent valves of composition having rolled Tobin bronze stems; that the clear waterway through the main valve shall not be less than 28 square inches and the internal diameter of the standpipe not less than 9 inches in diameter; that the inlet at the base of the hydrant shall be 8 inches internal diameter and flanged; that the hydrant shall be so designed that all valves, seats, spindles, etc., can be removed without disconnecting the hydrant; that the main valve can be opened and closed by one man, using a 15-inch wrench, when the hydrant is under the maximum working pressure of 300 pounds per square inch; that the fire-boat connection hydrants shall have two 3½-inch Fire Department standard female connections to fit with the fire-boat connections; that each hydrant shall be tested under 300 pounds and 600 pounds pressure, both with the main valve closed and with the main valve opened and the independent valve closed; that the hydrant shall be perfectly tight under 300 pounds pressure and not show a greater leakage than one-half ounce per minute under the 600 pounds pressure.

Bids were advertised for these hydrants on February 18, 1905, and were opened March 8, 1905, the bids were received from five concerns manufacturing hydrants. Each of the bidders was required to submit a sample hydrant for test before the award was made, to make certain that the hydrants submitted complied with the requirements. A thorough test of the sample hydrant submitted was made before the award of the contract. These tests were briefly as follows:

First—Under a static pressure of 300 and 600 pounds, respectively.

Second—When pumping through a hydrant with one of the fire-boats, at a pressure as near 300 pounds as possible, and opening and closing the hydrant to observe the facility of operation, freedom of water hammer, etc.

Third—All valves, valve seats, spindles, etc., were removed from the hydrant and the same reassembled and then subjected to a final test under a static pressure of 300 and 600 pounds.

The specifications prepared by the Chief Engineer for the Manhattan hydrants were identical with those which had been prepared by him for the Brooklyn hydrants. When the test of the latter was made, Mr. Foster Crowell, the expert of the Merchants' Association, was invited to be present at the test, and copies of the specifications were given to the New York Fire Insurance Exchange and also to the Board of Fire Underwriters. The hydrant as called for under the specifications is an improvement over that adopted by the United States Government at Washington and also over that adopted for the City of Philadelphia, this being due mainly to the experience obtained from the tests of the hydrants submitted to both these cities, so that the above statement is therefore not intended as a criticism on their hydrants or specifications for the same.

In Brooklyn, after consultation with Deputy Chief Lally and under his advice, the hydrants for that borough were provided with three 2½-inch nozzles and one 4½-inch nozzle. Deputy Chief Lally advocated the 2½-inch nozzles, that being the usual size of hose at present in use in Brooklyn. On the recommendation of Chief Croker, however, the sizes of the nozzles have been changed so that the hydrants as finally adopted have three 3-inch nozzles and one 4½-inch steamer nozzle, provided with a 3-inch outlet.

After extensive tests, the hydrant submitted by the A. P. Smith Manufacturing Company, of Newark, N. J., was selected as the one best fitted for the high pressure fire service in the Borough of Manhattan, and a contract was entered into on November 17, 1905, with this company for 1,050 four-nozzle post hydrants and 40 two-nozzle

fire-boat connection hydrants. The time of delivery of the complete contract is to be 340 calendar days, and the contract price is $104,640.

Fireboat Connections.

Fireboat connections will be located on the river front at places to be selected so as to render the best service, and on the end of the piers when practicable. A double female swivel increaser is provided for the use of the fireboats in connecting their larger hose with the smaller nozzle of the hydrants on the docks.

Street Sprinkling and Flushing.

In accordance with specific directions received, the system has been so designed that it may be used for street sprinkling and flushing, but care has been exercised to avoid any reduction in the efficiency of the system from a fire standpoint by street cleaning appliances, should this be adopted. On each hydrant branch a 3-way branch has been set between the cap and the hydrant and to this will be connected a small cast iron gate with a flanged pipe leading to the street cleaning hydrant. The hydrant will be so designed that the supply of water will be cut off therefrom when the pressure in the main rises above any prescribed limit, say 70 pounds. This provision is necessary to prevent injury to the men in the street cleaning gangs when at work sprinkling or flushing, if, while doing this work, the pressure is suddenly raised without warning. The street sprinkling and flushing hydrants will be of an entirely different appearance from that of the hydrants in use, as well as from those to be installed for the high pressure fire system, and will be plainly marked so as to offer no doubt as to the purpose for which they are intended. The high pressure fire service hydrants are to be operated exclusively by the employees of the Fire Department.

To provide the requisite water for street sprinkling and flushing, independent pumps will be ultimately installed at the stations, as the high pressure pumps are unsuited for this service, but as at present there are no definite data as to the amount of water required and pressure needed for street sprinkling and flushing, the installation of these special pumps will be delayed until these points are definitely settled. In the meantime the high pressure fire service pumps would be temporarily used.

After consultation with Commissioner Woodbury to ascertain his wishes in regard to location and number of hydrants, a plan was prepared by this Bureau and approved by the Street Cleaning Commissioner showing the hydrants to be installed for sprinkling and flushing purposes. As the appropriation made for the Borough of Brooklyn did not include the cost of these hydrants, and the Manhattan appropriation is not deemed sufficient to pay for their installation in this borough, no contract has yet been made for furnishing and installing these hydrants. Sufficient work has been done on the specifications for the same so that they can be readily completed and the contract advertised as soon as the matter is definitely settled and an appropriation obtained.

Water Curtains.

The Chief Engineer has not felt called upon to either recommend or condemn the installation and use of water curtains and, at a general discussion of the high pressure fire system with representatives of the Board of Fire Underwriters, Insurance Companies, Dock Department and others, he stated that in his opinion the preliminary steps should be:

First—To determine which buildings should be provided with water curtains.

Second—Who should bear the expense of the installation.

Third—What charge, if any, would be made for the water used through these water curtains.

The Chief Engineer added that these points should all be settled and the necessary regulations passed, the initiative to be taken by the Fire Department and the Bureau of Buildings, the province of this Department being simply to provide the necessary connections and carry into effect whatever regulations might be made in regard to the furnishing of and payment, if any, for the water supplied. The high pressure fire system, however, has been so designed that water curtains may be readily installed, if so decided.

System of Telephone Boxes.

(See Diagram No. 5.)

The system of telephone or signal boxes has been so designed that a fire in any part of a district can be watched from at least one of these telephone boxes and orders readily transmitted to the engineer at the pumping station in regard to the requisite pressure and amount of water needed, as well as to the use of fresh or salt water, thus saving invaluable time. These telephone boxes have been successfully installed and operated in the Philadelphia system. Before the final completion of the plan for this City, investigations were made by Mr. G. F. Sever, Consulting Electrical Engineer of this Department, and other Assistant Engineers, accompanied by Henry E. Vineing, Electrical Engineer of the Fire Department, City of New York. The plants of the fire alarm telegraph at headquarters, Borough of Manhattan, and also at headquarters, Borough of Richmond, were examined and the following results were obtained:

First—The present fire alarm telegraph, as in the Borough of Richmond, which contained no more than three or four boxes to the circuit, was adapted for use as an auxiliary telephone service, with the simple addition of receiving and sending instruments.

Second—In the Borough of Manhattan it was found that the conditions were entirely unfavorable to this method of auxiliary service, as the fire alarm telegraph system, located in the high pressure fire service area, consisted approximately as follows:

Number of circuits in high pressure area	41
Total number of pieces of signalling apparatus per circuit	1,038
Average number of pieces of signalling apparatus per circuit	25
Maximum number of pieces of signalling apparatus, per circuit	46
Minimum number of pieces of signalling apparatus, per circuit	7

For a telephone system which would give safe and efficient service it is vitally necessary that the number of boxes or pieces of apparatus on any one circuit should not be in excess of 6 or 7 boxes. It is thus seen that the use of the present fire alarm telegraph in the Borough of Manhattan is entirely precluded as an auxiliary telephone system.

Herewith is appended copy of the report of George F. Sever, Consulting Electrical Engineer of this Department, and copy of the official letter to Hon. Frank J. Goodwin, from the Fire Department, City of New York, corroborating the adoption of this form of telephone system.

Headquarters Fire Department, City of New York,
Nos. 157 and 159 East Sixty-seventh Street,
Borough of Manhattan, October 10, 1905.

Hon. FRANK J. GOODWIN, Deputy Commissioner, Department of Water Supply, Gas and Electricity:

Sir—The Electrical Engineer of this Department, to whom was referred your communication of the 20th ult., stating that your Department is considering the question of an auxiliary telephone service to be used in connection with the new high pressure fire system, has returned the same with report reading as follows:

"New York, October 9, 1905.

"Hon. NICHOLAS J. HAYES, Commissioner:

"Sir—Pursuant to your instructions of September 26, 1905, as per the communication enclosed herewith, endorsed and respectfully returned, I have the honor to report that the matter of telephone equipment, as set forth in the plans and specifications which are also respectfully submitted and accompany this report, has been carefully examined by me in company with the representatives of the Department of Water Supply, Gas and Electricity, and that, after due consideration of all the means or methods that may be employed for the purpose required, the means suggested in the communication submitted to Mr. I. M. de Varona, Chief Engineer, Department of Water Supply, Gas and Electricity, by W. A. Bethell, Esq., general manager, New York Telephone Company, are undoubtedly the best.

"I have the honor, therefore, of respectfully advising you as above, and submit the opinion for your approval.

"The enclosed maps and communications are the only ones at present in existence covering the layout of the proposed system, and the return of the same accompanied with your reply to the Hon. Frank J. Goodwin, Deputy Commissioner, Department of Water Supply, Gas and Electricity, is requested.

"Very respectfully,
(Signed) "HENRY E. VINEING, Electrical Engineer."

I am directed by the Commissioner to notify you accordingly and to return maps and typewritten copy of communication dated June 26, 1905, from the general manager of the New York Telephone Company to the Chief Engineer of your Department, referred to in the report of the Electrical Engineer of this Department.

Respectfully,
(Signed) JOHN R. SHIELDS, Assistant Secretary.

Department of Water Supply, Gas and Electricity,
Office of Consulting Electrical Engineer, Nos. 13 to 21 Park Row,
City of New York, October 14, 1905.

Mr. I. M. DE VARONA, Department of Water Supply, Gas and Electricity, New York City:

Dear Sir—In reply to your letter of recent date, I have to advise you that on Monday, October 2, and Friday, October 6, Mr. Vineing of the Fire Department, your Mr. Gannon and I had conferences on the most desirable signal system for use in connection with the proposed high pressure pumping service in Manhattan.

We visited the fire alarm system in Richmond and made a test of the possibility of using a telephone for the transmission of signals to headquarters. On those lines it worked very satisfactorily. However, I am of the opinion, in view of the recent investigation into the fire alarm situation in Manhattan, that it would be very undesirable and practically impossible to endeavor to use the fire alarm wires for the certain transmission of telephonic communication. Therefore, I have to recommend that the same system which is now being used by the Police Department in the Borough of Manhattan be employed for the transmission of signals from the scene of a fire to the proposed pumping plants and to fire headquarters. This system consists of a telephone set placed in a cast iron box and fastened to the walls of buildings; in some cases to the New York Edison Company poles, and on their own poles on the edge of the sidewalk.

After the conference which we have had, I would suggest that the box be not placed on the same poles with the fire alarm boxes, as if it is placed on the same pole it is liable to cause confusion to the sender of the fire alarm signal. The present police signal system rented from the New York Telephone Company has been maintained in most excellent condition and has given most satisfactory service. The same system now obtains on the Coney Island Pumping Service.

I therefore recommend that this system be employed, being rented from the New York Telephone Company as per their proposition which has been presented to the Department of Water Supply, Gas and Electricity.

Yours very truly,
(Signed) GEORGE F. SEVER.

The contemplated telephone system consists of:

First—That two telephone switchboards be installed, one in each of the pumping stations.

Second—That radiating from each of these switchboards there be provided telephone wires terminating in telephone call boxes of the type now being used by the Police Department in the Borough of Manhattan, this City, and that no more than six of these boxes be placed upon each line.

Third—That connecting together the switchboards at the pumping stations there be furnished a private trunk line to be used so as to provide for the co-operation of the two pumping stations, as may be necessary.

Fourth—That extending from the switchboard at each pumping station there be a special telephone line connected to the nearest telephone central office, so as to provide general telephone service to be used for administrative purposes and also to be used in connection with the general telephone system and the Police Department telephone system, so as to provide a breakdown connection which could be used in the event of a disaster affecting the special system connected with any office.

Two telephone switchboards should be provided, one in each of the pumping stations, as this is the obvious and natural arrangement. A dotted line dividing the districts served by the pumping stations, so far as the signalling system is concerned, is shown along Houston street in the map attached hereto. (See diagram No. 5.)

The two switchboards to be located at the pumping stations should be constructed with especial care, so as to avoid damage by fire or otherwise. Each switchboard should be provided with a trunk line extending to the nearest telephone central office so as to provide a source of current supply for the transmitters, and, in addition to this, a special breakdown machine should be installed at each pumping station, so that the chances of the switchboard being thrown out of service would be reduced to the very lowest possible degree.

Supplying current to these switchboards in this manner provides talking and signalling current to all of the telephone stations connected with the system. In this way the use of local batteries at the telephone stations is avoided and the well-known troubles incident to the use of such batteries and the danger of their freezing in winter are obviated.

Call boxes of the type now used by the Police Department are recommended because boxes of that kind were very carefully designed by the New York Telephone Company in connection with Professor George F. Sever, Consulting Electrical Engineer of this Department. The general principles of the operation of these boxes are correct and should be adhered to, but a number of possible improvements which have been suggested as the result of experience with these boxes should be incorporated in the boxes provided for this special service.

The desirability of a trunk line joining the switchboards at the two pumping stations to be used so as to permit co-operation between these stations is obvious and need not be further discussed.

The desirability of having a general telephone connected with each pumping station for administrative purposes is apparent, but, in addition to this and what is much more important, this telephone could be used in emergencies. Although every possible precaution that should be adopted is contemplated, yet, as excellent provision can be made for a breakdown by the simple expedient of a line joining the telephone central office with the pumping stations, it seems that such a plan should be adopted. In the unusual event of the special telephone system failing, the necessary instructions could be given by the Fire Department through any of the police boxes now so generally installed throughout the Borough of Manhattan. Such instructions could, by an arrangement with the Police Department, be received at the Police Station and then transmitted through the general telephone to the pumping stations. In addition to this, by the provision of the general telephone, any public or private telephone connecting with the City telephone system might be used in the same manner. The very great insurance which is thus obtained far outweighs the small additional expense of the two central office telephone lines.

The work comprises furnishing, installing and maintaining the following:

1. Two telephone switchboards, one to be located at each pumping station.
2. A total number of 213 telephone call boxes, these boxes to be located approximately as shown in diagram No. 5, attached hereto, together with circuits connecting said boxes with the high pressure pumping stations.
3. Two extension stations, one located in each of the pumping stations and connected with the special switchboard in its station.
4. Suitable current supply wires extending from each switchboard to the nearest central office of the New York Telephone Company.
5. Two reserve machines capable of supplying on emergency the necessary current for operation of the switchboards and telephone call boxes.
6. A private tie line connecting the two switchboards.
7. Two central office lines, one line to extend from each pumping station switchboard to the nearest central office.
8. The right to send over each line extending from a pumping station to the nearest central office 4,000 local messages, i. e., messages to other telephone stations in the Borough of Manhattan.

The company will furnish the above system and service to The City of New York on a five-year contract, and subject to their usual regulations, for the sum of approximately $8,000 per year; additional local messages will be charged for at their regular rates.

The company will maintain the telephone system, as installed, in good working order, but the City will furnish the operators necessary at the switchboards in the pumping stations.

The telephone boxes will be located at the most convenient points available, being attached to buildings where property owners' consents can be obtained, or otherwise being placed upon posts in a manner similar to the fire alarm telegraph or police telephone system.

General Statement of Apportionment of the Moneys Available for the High Pressure Fire System.

Authorized by the Board of Estimate and Apportionment		$3,950,400 00
Hydrant Contract—		
Contract let, about 1,200 hydrants required	$120,000 00	
Pumps and Motors—		
Contract let for two stations, about	240,000 00	
Two Buildings—		
Plans practically complete (estimated)	240,000 00	
Salt Water Suction Mains—		
Plans complete (estimated)	65,000 00	
Land at Oliver Street Site—		
The Commissioners for condemnation appointed (estimated)	125,000 00	
Distribution System—		
Contract let	2,825,000 00	
	$3,615,000 00	
Salaries, from April 1, 1904, to date and for 30 months to come, 6 per cent. of appropriation (estimated)	240,000 00	
		3,855,000 00
Balance, for contingencies		$95,400 00

No charge is made for fresh water suctions because this will be paid for under appropriation for laying Croton mains.

No allowance has been made for electrical feeder cables, as the charge for the same will be in the form of rental and as a part of maintenance.

No allowance made for street sprinkling hydrants.

No allowance made for telephone service, because this will be rental under a fixed charge by the telephone companies, and as part of the expense of maintenance.

Office Room.

As previously reported, the office room allotted to this Bureau is entirely inadequate for the efficient performance of our work. Not only is the space allowed insufficient, but poorly distributed, so that a portion of the force is on the fifteenth floor and another on the sixth, while a large portion of the records and maps are at High Bridge for lack of sufficient room, thus entailing considerable loss of time. Arrangements should be made to secure larger space and to have the Engineer's Bureau all on one floor. I understand that it will be practicable to give up the rooms occupied by the High Pressure Fire System Division and Mechanical Division on the sixth floor and obtain more space on the ninth floor, and that by the end of next year the rest of the engineering force now on the fifteenth floor would also be accommodated on the ninth floor. Such an arrangement should be carried out as speedily as practicable.

Respectfully submitted,

I. M. DE VARONA, Chief Engineer.

III.

Department of Water Supply, Gas and Electricity,
Bureau of Electricity for Manhattan and The Bronx,
New York, January 18, 1906.

Hon. WILLIAM B. ELLISON, Commissioner:

Sir—In accordance with your instructions, I have the honor to submit herewith report of the operations of the Electrical Bureau for Manhattan and The Bronx for the year 1905.

High Tension Electric Service.

During 1905 there were constructed 228.096 miles of subways for high tension electric service.

The following is a summary of high tension subway construction in the Borough of Manhattan from the introduction of the subway system in 1886 to December 31, 1905:

	Subways Built, Miles.
1886-1897, under direction of the Board of Electrical Control	738.992
1898-1901, under direction of the Department of Public Buildings, Lighting and Supplies	565.658
1902-1905, under direction of the Department of Water Supply, Gas and Electricity	661.475
Total to December 31, 1905	1,966.125

	Subways, Miles.
Average Yearly Construction—	
12 years, 1886-1897	61.583
4 years, 1898-1901	141.415
4 years, 1902-1905	165.369

Low Tension Electric Service.

The length of low tension subways built in 1905 is 159.328 miles.

The following is a summary of construction for low tension electric service since the introduction of the subway system in Manhattan and The Bronx in 1886 to December 31, 1905:

	Subways Built, Miles.
1886-1897, under direction of the Board of Electrical Control	1,278.969
1898-1901, under direction of Department of Public Buildings, Lighting and Supplies	482.474
1902-1905, under direction of Department of Water Supply, Gas and Electricity	760.244
Total to December 31, 1905	2,521.687

	Subways, Miles.
Average Yearly Construction—	
12 years, under the Board of Electrical Control	106.581
4 years, under Department of Public Buildings, Lighting and Supplies	120.618
4 years, under Department of Water Supply, Gas and Electricity	190.061

The figures given in the foregoing part of this report on the subject of new construction are summaries for three separate periods, when the work was successively under the direction of the Board of Electrical Control, the Department of Public Buildings, Lighting and Supplies, and the present Department of Water Supply, Gas and Electricity. The subjoined tables give the details, including both high and low tension electric service.

TABLE I.

Showing Length of Subways and Ducts Constructed in 1905, with Classification of Service.

For Edison Electric Light Company—	
Trench, feet	3,653.760
Trench, mile	.692
Duct, feet	4,213.440
Duct, mile	.798
For Electric Light and Power Companies—	
Trench, feet	331,209.85
Trench, miles	62.729
Duct, feet	1,204,349.60
Duct, miles	228.096
For Telephone and Telegraph Companies—	
Trench, feet	42,472.320
Trench, miles	8.044
Duct, feet	837,038.400
Duct, miles	158.530

TABLE II.

Total Construction of Subways in Manhattan and The Bronx from Introduction of System in 1886 to December 31, 1905.

	Miles.
Edison, low tension	277.316
Electric light, high tension	1,966.125
Telephone and telegraph	2,219.344
Ventilating pipe	60.110
Grand total	4,522.895

TABLE III.

The total construction is shown in the following tables in detail, giving class of service, linear feet and total mileage by years, as follows:

Year.	Edison.		Electric Lighting.		Telephone and Telegraph.		Ventilating Pipe.	
	Feet.	Miles.	Feet.	Miles.	Feet.	Miles.	Feet.	Miles.
1886	.....	.....	.....	.....	235,644.16	44.629	.....	.....
1887	209,011.64	39.585	238,428.65	45.157	958,264.69	181.489	.....	.....
1888	22,227.88	4.210	183,353.13	34.726	136,970.37	215.336	.....	.....
1889	57,327.24	10.858	1,929,962.97	365.523	344,985.58	65.338	77,752.28	14.725
1890	248,973.54	47.155	438,902.05	83.125	944,567.32	178.895	59,187.68	11.210
1891	180 303.14	34.148	274,411.20	51.972	236,835.94	44.855	30,314.65	5.741
1892	166,034.00	31.445	129,852.00	24.593	70,760.82	13.401	8,033.50	1.520
1893	92,577.40	17.534	156,646.10	29.667	574,982.07	108.898	73,776.24	13.973
1894	38,250.47	7.244	107,427.90	20.346	119,662.70	22.662	8,845.40	1.675
1895	59,332.14	11.237	95,781.40	18.140	246,193.39	46.627	16,943.76	3.209
1896	41,247.79	7.812	183,788.50	34.808	152,807.85	28.941	25,598.55	4.847
1897	62,899.57	11.913	163,334.75	30.935	166,940.13	31.618	4,753.63	0.900
1898	73,732.44	13.96	120,119.67	22.731	436,548.00	82.68	12,197.00	2.31
1899	52,252.69	9.896	518,728.30	98.244	261,353.20	49.499	.....	.....
1900	48,317.280	9.151	261,509.30	49.528	899,944.320	170.444	.....	.....
1901	9,262.38	1.754	2,086,417.20	395.155	161,493.83	219.979	.....	.....
1902	16,357.26	3.093	620,034.58	117.431	184,909.70	224.415	.....	.....
1903	44,094.40	8.730	868,584.87	164.504	749,575.20	285.946	.....	.....
1904	42,240.00	6.899	799,625.77	151.444	202,303.61	45.162	.....	.....
1905	4,213.440	0.798	1,204,349.60	228.096	837,038.400	158.530	.....	.....
Total	1,468,654.700	277.422	10,381,157.94	1,966.125	11,921,781.280	2,219.344	317,402.69	60.110

Aerial Wiring.

It is gratifying to state that the last of the pole lines in the Borough of Manhattan south of One Hundred and Tenth street have been removed and the conductors supported by them placed in subways. There are at present no poles obstructing the streets, with the exception of those supporting City lights, nor does the Department countenance the issuing of a permit for the placing of a pole to support electrical conductors in this section of the Borough of Manhattan.

In removing the poles and conductors from the streets and placing them in subways, it was necessary in numerous instances to place some of the short lengths of wire on the house tops, crossing the streets, and this Bureau has directed its attention to the removal of these wires in those sections of the borough where the streets they intersect are provided with sufficient subway accommodations for the proper operation of the conductors. To that end the wires have been cleared from the streets from Chambers street to Whitehall street, from Greenwich street to Pearl street, from Chambers street to Canal street, and from Broadway to Greenwich street. In these districts no permits are issued for the placing of aerial wires.

The programme mapped out for this year's procedure will extend the territory from Canal street to Houston street, from Broadway to Hudson street, there being sufficient subway accommodation for all electrical conductors which the companies have the lawful right to place in the streets of New York.

Our Inspectors are continually discovering wires strung across the streets by private concerns which are not in possession of a franchise authorizing them to use the streets, and, consequently, without the permit of this Department to install the same. It has therefore been necessary for this Bureau to keep an Inspector and Laborer constantly at work searching for and removing these conductors, and during the past year the number of these wires, together with abandoned wires, removed by our Inspectors, without additional expense to the City, was approximately 175,850 feet, or 33.3 miles.

TABLE IV.

Permits Issued for the Construction of Subways and Subsidiaries Since the Organization of This Bureau in 1898.

	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
Subway permits	140	350	320	391	723	953	973	1,493
Subsidiary permits	973	2,950	3,010	2,789	3,861	4,071	4,172	5,185
Total	1,113	3,300	3,330	3,180	4,584	5,024	5,145	6,678

Increase in subway permits, 1905 over 1904, 53½ per cent.
Increase in subsidiary permits, 1905 over 1904, 24¼ per cent.

TABLE V.

Permits Issued in 1905 for Erection of Poles and Stringing Overhead and Underground Electrical Conductors.

For signal wires	3,751
For electric wiring	4,132
For pole lines	319
For resetting dangerous poles	197
For City lighting and lamp-posts	252
Underground conductors	5,713
Total	14,364

The following table gives a summary of the permits issued for aerial conductors from 1898 to December 31, 1905:

TABLE VI.

Exterior Wiring.

Permits Issued.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
Signal wires	1,485	2,124	2,600	2,416	2,059	2,756	2,772	3,751
Electric lighting	1,083	1,340	989	983	1,150	2,772	2,355	4,132
Poles and pole lines	38	93	126	126	224	270	233	319
Resetting poles	45	12	30	61	25	38	385	197
Electric lamp-posts	22	38	15	9	61	136	286	252
Subsidiaries	975	2,950	3,010	2,789	3,874	4,106	4,172	5,185
Subways	140	350	320	391	723	953	973	1,493
Underground conductors	..	..	3,202	2,027	3,590	3,021	3,890	5,713
Total	3,788	6,907	10,292	8,802	11,706	14,052	15,066	21,042
Inspections made	....	9,325	14,522	13,020	14,738	16,015	18,806	21,395

Interior Wiring.

The record for the past year shows that about six thousand more applications for inspection were received than during the year 1904, and that about four thousand more certificates were issued, which covers an increase in number of incandescent lamps installed over the previous year of 112,096. The number of moters covered by certificates shows an increase of 2,051; the total horse-power, however, indicates 718 less than last year, which means that more small motors varying in size from ⅛ horse-power to 1-16 horse-power, principally fan motors, have been installed.

We have issued 5,377 complaint notices, which is 326 less than were sent out in 1904. These figures are significant in view of the large increase in number of installations inspected, and show that the electrical workers are becoming more proficient in making their plans and in the execution of this very important branch of the electrical industry. This evident co-operation is especially desirable, as electrical wiring or appliances, unless properly installed, are an additional fire hazard and particularly dangerous, while such wiring and appliances, when installed in accordance with the rules and regulations of this Department, are one of the safest methods known for the introduction of heat, light and power in buildings, and insomuch, a protection to life and property.

In comparing the number of generators installed for private plants with the number reported for inspection last year, it will be noted that a decrease of fifty-three units is shown, which may be partially attributed to the reduction in maximum rate from fifteen cents to ten cents per kilowatt hour, which the illuminating companies now charge, the change of rate having gone into effect July 1, 1905, according to statute.

The two inspectors who examine theatre wiring and special work, have shown splendid results, especially in the condemnation of old equipments and causing their reconstruction; but owing to the pressure of new business were unable to devote as much time to this class of work as was performed in 1904.

In February, we lost through death one of our inspectors, and we now have fifteen inspectors and one assistant to handle 3,988 applications for interior wiring on hand December 31, 1905, against sixteen men and one assistant taking care of 2,767 applications on hand December 31, 1904. From this it will be seen that the inspectors had on an average of 266 applications each on December 31, 1905. This number is excessive, as the best an inspector can consistently do under the most favorable conditions is to visit each job in a district every ten days or two weeks, during which time the work can be concealed, thus increasing the disadvantages of an insufficient force to properly cope with the work and materially lessens their opportunity to make a careful and thorough inspection.

The inspectors frequently find wiring and appliances installed within buildings which have not been reported to this Department for inspection, such work in nearly every instance having been installed by incompetent workmen, unfamiliar both with the rules governing the installation of such equipments and the necessity of inspection before introduction of current, and although it is estimated that less than two per cent. of the fires occurring in this City are caused by electricity, in many instances serious results have followed such practice.

I respectfully call your attention to this serious condition and the necessity for some action which would effectually put an end to such occurrences, and would suggest legislative action, which would compel every contractor to obtain a license before installing wires and appliances in buildings in this City.

The present indications are that the work for this year will greatly exceed that of any previous year, and additional inspectors will be necessary for the proper and frequent inspections which both the contractors and the general public demand.

It is gratifying to quote in part from an exhaustive report made by a Committee of Twenty, appointed by the New York Board of Fire Underwriters to investigate the conditions affecting the fire and conflagration hazards in this City:

"Both the Municipal and Underwriting Inspection Departments are well organized and are doing good work. An inspection by the National Board of Engineers of nearly 1,000 equipments brought to light no cases of incompetency. The situation with respect to old work, however, reveals the need of more speedy reinspection. The Municipal Code is excellent, being practically the same as the National Code and well enforced on new work, the Underwriters enforcing the National Code fully well. Conditions with respect to outside wiring are generally satisfactory. Wiring is generally underground in Manhattan, but high potential overhead circuits are frequent in The Bronx. Electrolysis is not appreciably felt."

TABLE VII.

Applications, Inspections and Certificates for Interior Wiring, 1898-1905.

	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
Applications for inspections	11,363	14,949	15,693	15,903	18,443	21,113	21,722	27,509
Certificates issued	10,842	13,509	14,352	14,226	16,736	20,501	20,692	24,912
Complaint notices issued	1,564	2,136	3,238	3,396	3,078	5,674	5,703	5,377
Complaint notices attended to	1,459	1,779	3,095	3,337	2,832	6,122	5,760	5,151
Work Covered by Certificates.								
Incandescent lamps	394,715	115,625	504,365	440,662	424,232	443,914	604,061	716,157
Arc lamps	3,840	3,887	6,411	3,123	4,030	7,226	7,662	5,560
Motors	3,234	4,663	4,743	5,147	5,933	7,393	9,962	11,013
Horse power of motors	14,999	17,934	17,135	15,302	20,328	25,002.57	29,553	28,835
Generators	131	94	115	160	166	246	284	231
Kilowatt capacity of generators	7,587	11,912	5,475	8,249	60,516	30,653.714	66,988	50,794
Electric heaters	.....	.....	.....	.....	.....	.....	170	314
Inspections made	27,367	41,240	50,663	48,832	58,015	70,965	79,939	80,134

The above shows that certificates issued by this Department covering electrical equipments installed in buildings for 1,311,002 sixteen-candle-power lamp equivalents were found to comply with the rules and regulations of this Department. We have 3,988 applications on hand, for which we were unable to issue certificates, the work being in an unfinished condition.

The following is a summary of the number of certificates, complaint notices and permits issued by the Electrical Bureau for the Boroughs of Manhattan and The Bronx, from 1898 to 1905, inclusive:

TABLE VIII.

	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
Total certificates issued	10,842	13,509	14,352	14,226	16,736	19,702	19,718	24,912
Total complaint notices issued	1,564	2,136	3,238	3,396	3,978	5,674	5,703	5,377
Total permits issued	3,788	6,907	10,292	8,802	11,706	14,052	15,066	21,042
Grand total	16,194	22,552	27,882	26,424	32,420	39,428	40,487	51,331

The following table gives the number of inspections of exterior and interior wiring, from 1899 to and including 1905:

TABLE IX.

	1899.	1900.	1901.	1902.	1903.	1904.	1905.
Exterior wiring	9,325	14,522	13,020	14,738	16,015	18,806	21,395
Interior wiring	41,240	50,663	48,832	58,015	70,965	79,939	80,134
Total	50,565	65,185	61,852	72,753	86,980	98,745	101,529

Respectfully yours,
FRANK E. BROWN, Electrical Engineer.

IV.

Department of Water Supply, Gas and Electricity,
Office of Deputy Commissioner, Municipal Building, Room 28,
Brooklyn, March 17, 1906.

Hon. WILLIAM B. ELLISON, Commissioner of Water Supply, Gas and Electricity:

Dear Sir—I beg to forward herewith report of the transactions of the Department in this Borough for the year 1905, as shown by the statements of the following Bureaus:

Bureau of the Chief Engineer.
Bureau of Electricity and Gas.
Bureau of Lamps and Lighting.
Bureau of Water Rates.
Office of Supplies and Accounts.

Yours truly,
WILLIAM C. COZIER,
Deputy Commissioner, Borough of Brooklyn.

IVa.

Department of Water Supply, Gas and Electricity,
Chief Engineer's Office, Room 25, Municipal Building,
Brooklyn, New York, January 10, 1906.

Hon. WILLIAM C. COZIER, Deputy Commissioner of Water Supply, Gas and Electricity:

Dear Sir—The following report shows the condition of the water supply in this borough and work done in connection with the same for the year ending December 31, 1905, and also the receipts (classifying only those for metered and unmetered water) and the expenditures provided for under the Water Revenue Budget prepared by this Bureau, as well as those items of the Tax Levy Budget chargeable to Engineering work.

Receipts.

	1904.	1905.
Regular water rates	$1,608,664 63	$1,698,479 26
Metered water rates	775,869 84	905,086 63
Default, arrears, etc.	297,885 67	338,101 23
Total receipts	$2,682,420 14	$2,941,667 12
Revenue refund	1,591 24	2,408 70
Net receipts	$2,680,828 90	$2,939,258 42

Expenditures.

	1904.		1905.	
Water Revenue Budget.				
Maintenance of Supply—				
Chief Engineer, Salaries	$458,922 66		$502,350 33	
Chief Engineer, Supplies	267,550 10		292,619 78	
		$726,472 76		$794,970 11
Maintenance of Distribution—				
Distribution and Repairs, Salaries	$250,592 91		$246,363 89	
Distribution and Repairs, Supplies	32,490 85		31,446 31	
		283,083 76		277,810 20
Deputy Commissioner, Supplies		958 03		762 65
Supplies and Accounts, Salaries	$11,144 75		$11,740 71	
Supplies and Accounts, Supplies	53 44		114 99	
		11,198 19		11,855 70
Water Registrar, Salaries (Inspectors)		*	$31,066 64	
Water Registrar, Supplies		769 92	960 48	
				32,027 12
Total Expenditures (Water Revenue)		$1,022,482 66		$1,117,425 78
Tax Levy Budget.				
Salaries, Laboratory	$5,486 81		$7,237 58	
Supplies and Contingencies	438 25		1,213 81	
Rental of Fire Hydrants	25,000 00		18,750 00	
Total Expenditures (Tax Levy)		30,925 06		27,201 39
Total Expenditures (Water Revenue and Tax Levy)		$1,053,407 72		$1,144,627 17

*This item amounted to $32,137.52 and was included in the $250,592.91 for Distribution and Repairs and Salaries.

The Budget prepared by this Bureau for expenditures for the year 1905, has been found to be ample to provide for the requirements of the service and to leave a material balance in the account for supplies.

The account for salaries has been increased by the necessity of utilizing almost constantly for the greater part of the year all the driven well stations, and also of increasing the amount of work on the distribution system in order to maintain it within a reasonable state of efficiency.

Appropriations, Expenditures and Balances.

Appropriations for 1904—			
Rentals of Fire Hydrants:			
Balance, January 1, 1905		$6,250 00	
Expended, per voucher		6,250 00	
Appropriations for 1905—			
Salaries, Laboratory:			
Appropriation		$7,300 00	
Expended, per voucher		7,237 58	
Cash balance, January 1, 1906			$62 42
Rentals of Fire Hydrants:			
Appropriation		$25,000 00	
Expended, per voucher		18,750 00	
Cash balance, January 1, 1906			$6,250 00
Contract liability			6,250 00

Bond Accounts.

High Pressure Fire Service, etc.—			
Balance, January 1, 1905		$1,458,772 53	
Premium on bonds sold, May 5, 1904, not previously credited		3,042 75	
		$1,461,815 28	
Expended, per Voucher:			
Salaries	$39,032 01		
Contracts	286,920 52		
Sundries	6,582 37		
		332,534 90	
Cash balance, January 1 1906		$1,129,280 38	
Estimated Liabilities:			
Contracts	$678,709 08		
Sundries	2,517 02		
		681,226 10	
Estimated balance, January 1, 1906			$448,054 28
Water Construction—			
Balance, January 1, 1905		$657,239 07	
Credit, adjustment by Comptroller of final estimate for Millburn engines		1,507 50	
		$658,746 57	
Expended, per voucher, contract		7,268 92	
Cash balance, January 1, 1906			$651,477 65
Water Main Fund—			
Balance, January 1, 1905		$62,842 65	
Expended, per Voucher:			
Salaries	$10,895 00		
Contracts	18,184 55		
Sundries	2,375 87		
		31,455 42	
Cash balance, January 1, 1906		$31,387 23	
Estimated liabilities, contracts		3,797 51	
Estimated balance, January 1, 1906			$27,589 72
Water Fund—			
Balance, January 1, 1905		$1,896,649 53	
Bond issue for construction of road at Hempstead reservoir		5,000 00	
Premium on sales of bonds not previously credited.		19,782 13	
		$1,921,431 66	
Expended, per Voucher:			
Salaries	$57,158 66		
Contracts	516,635 68		
Sundries	93,697 30		
		667,491 64	
Cash balance, January 1, 1906		$1,253,940 02	
Estimated Liabilities:			
Contracts	$859,985 63		
Sundries	26,143 99		
		886,129 62	
Estimated balance, January 1, 1906			$367,810 40

Water Revenue Accounts.

Maintenance and Distribution of Water Supply, 1905—			
Appropriated by resolution of Board of Estimate and Apportionment:			
January 13, 1905		$500,000 00	
June 16, 1905		500,000 00	
July 14, 1905		525,221 93	
		$1,525,221 93	
Expended, per Voucher:			
Salaries	$791,521 57		
Contracts	233,377 42		
Sundries	92,526 79		
		1,117,425 78	
Cash balance, January 1, 1906		$407,796 15	
Estimated Liabilities:			
Contracts	$295,756 36		
Sundries	65,671 50		
		361,427 86	
Estimated balance, January 1, 1906			$46,368 29
Maintenance and Distribution of Water Supply, 1904—			
Balance, January 1, 1905		$322,199 26	
Appropriated by Board of Estimate and Apportionment, June 2, 1905		2,500 00	
		$324,699 26	

Maintenance and Distribution of Water Supply, 1904—			
Expended, per Voucher:			
Salaries	$3,065 52		
Contracts	269,277 57		
Sundries	31,403 33		
		303,746 42	
Cash balance, January 1, 1906		$20,952 84	
Estimated Liabilities:			
Contracts	$5,882 42		
Sundries	1,953 00		
		7,835 42	
Estimated balance, January 1, 1906			$13,117 42
Maintenance and Distribution of Water Supply, 1903—			
Balance, January 1, 1905		$8,794 91	
Debit, expenditures during 1904, not previously charged		1,771 16	
		$7,023 75	

Maintenance and Distribution of Water Supply, 1903—			
Expended, per voucher, sundries		1,783 45	
Cash balance, January 1, 1906		$5,240 30	
Estimated liabilities, sundries		1,000 00	
Estimated balance, January 1, 1906			$4,240 30
Maintenance and Distribution of Water Supply, 1902—			
Balance, January 1, 1905		$50,080 47	
Expended, per voucher, sundries		37 60	
Cash balance, January 1, 1906		$50,042 87	
Estimated liabilities, sundries		1,000 00	
Estimated liabilities, January 1, 1906			$49,042 87
M. and R.—Materials and Supplies, 1900:			
Expended, per voucher			$465 00

Summary, Borough of Brooklyn.

	Amount Available.	Disbursements, per Voucher.		Cash Balance, January 1, 1906.	Estimated Liabilities, Not Including Salaries.	Estimated Balance, January 1, 1906.
Appropriation Accounts.						
Salaries, Laboratory, 1905	$7,300 00	$7,237 58		$62 42	.....	$62 42
Rental of Fire Hydrants, 1905	25,000 00	18,750 00		6,250 00	$6,250 00	.....
Rental of Fire Hydrants, 1904	6,250 00	6,250 00		.....	.....	.....
Total disbursements	.....	.....	$32,237 58			
Bond Accounts.						
High-pressure Fire Service, etc	$1,461,815 28	$332,534 90		1,129,280 38	681,226 10	448,054 28
Water Construction, Borough of Brooklyn	658,746 57	7,268 92		651,477 65	.....	651,477 65
Water Main Fund, Borough of Brooklyn	62,842 65	31,455 42		31,387 23	3,797 51	27,589 72
Water Fund, Borough of Brooklyn	1,921,431 66	667,491 64		1,253,940 02	886,129 62	367,810 40
Total disbursements	.....	.....	1,038,750 88			
Water Revenue Accounts.						
Maintenance and Distribution of Water Supply, 1905	$1,525,221 93	$1,117,425 78		407,796 15	361,427 86	46,368 29
Maintenance and Distribution of Water Supply, 1904	324,699 26	303,746 42		20,952 84	7,835 42	13,117 42
Maintenance and Distribution of Water Supply, 1903	7,023 75	1,783 45		5,240 30	1,000 00	4,240 30
Maintenance and Distribution of Water Supply, 1902	50,080 47	37 60		50,042 87	1,000 00	49,042 87
Maintenance and Repairs, Materials and Supplies, 1900	.....	465 00		.....	.....	.....
Total disbursements	.....	.....	1,423,458 25			
Total expended during 1905	.....	.....	$2,494,446 71			

WATER CONSUMPTION—U. S. GALLONS.

All Supplies.

	1904.	1905.
Average daily consumption	113,149,117	119,234,968
Maximum daily consumption, winter months	133,617,750 (Jan. 5)	138,144,292 (Feb. 14)
Maximum daily consumption, summer months	118,734,050 (Aug. 29)	131,933,916 (July 14)
Maximum average daily consumption for one month	128,156,893 (Feb.)	129,515,942 (Feb.)
Maximum daily consumption for year	133,617,750 (Jan. 5)	138,144,292 (Feb. 14)
Population dependent upon the systems	1,290,800	*1,312,900
Average consumption per head per day	87.6	90.8

*New York State Census, 1905, excluding estimated population of Twenty-ninth Ward and part of the Thirty-second Ward.

In the above table, and in the statements hereinafter to be made on the condition of the supply, the item of "consumption" includes not only the actual amount of water used by consumers, but also waste and any errors of measurement.

Storage.

Reservoir.	January 1, 1905. Depth, Feet.	January 1, 1905. Contents, U. S. Gallons.	January 1, 1906. Depth, Feet.	January 1, 1906. Contents, U. S. Gallons.
Ridgewood Basin No. 1	15.47	53,716,500	17.20	60,170,000
Ridgewood Basin No. 2	15.34	61,901,200	17.15	69,747,000
Ridgewood Basin No. 3	13.89	101,649,000	17.05	126,121,000
Mount Prospect	21.65	21,043,400	18.88	17,945,000
New Lots	11.10	2,698,700	12.70	3,259,000
Total (City)	.....	241,008,800	.....	277,242,000
Hempstead	13.42	446,156,000	3.92	40,215,000
Total Storage	.....	687,164,800	.....	317,457,000

Rainfall—Inches.

Year.	Brooklyn.	Hempstead.
1900	43.11	41.43
1901	47.98	49.92
1902	48.47	51.98
1903	52.49	52.14
1904	44.41	48.62
1905	42.42	36.82

The total rainfall recorded at the Hempstead Storage Reservoir was considerably less than that recorded at the Municipal Building, many of the Summer storms giving a much lower precipitation on the watershed than within the Borough limits. The effect of this reduced rainfall was keenly felt, as storms of small magnitude during the summer months give practically no run-off, owing to the dry soil and the needs of vegetation absorbing all the water from a light rainfall. It is the rain falling during the latter part of the storm that finds its way to the underground water level and increases the yield of the streams and driven-well stations.

In my report of last year attention was called to the fact that the meteorological conditions had been abnormal, and I there expressed the belief that we would naturally expect to have a long period of low rainfall with hot summers, resulting in a decrease in the supply on the one hand and an increase in consumption on the other. The record of this year has borne out my expectation as far as the rainfall, although the temperature for the past summer was not abnormally high. It is to be expected that the low rainfall of this year, which was about seven inches less than the average, will be followed by other years of rainfall below normal, and we cannot, therefore, safely expect to obtain from our present sources a supply even equal to that obtained during the year that has just passed.

General Condition of the Supply.

The full effect of the increased consumption, due to the replacing of small tuberculated mains by large mains in the older sections of the borough, was felt this year, and the demand on this account, together with the waste due to the extremely cold weather of January and February, was much greater than would have been experienced under normal conditions, and we were compelled to tax the brick and pipe conduits to their utmost capacity in order to meet the consumption. The increase in consumption in the early part of the year is strikingly shown by a comparison of the average daily consumption for the past three years, as given in the following table:

Month.	Average Daily Consumption in U. S. Gallons. 1903.	1904.	1905.	Percentage of Increase. 1904, On Basis of 1903.	1905, On Basis of 1904.
January	107,828,904	116,463,845	127,800,488	8.0	9.7
February	108,589,023	128,156,893	134,345,105	18.0	4.8
March	105,100,729	114,487,613	128,192,184	8.9	11.9
April	103,025,471	106,631,005	122,204,130	3.5	14.6
May	104,753,479	106,506,897	125,977,199	1.7	18.3
June	100,690,550	109,029,548	124,769,327	8.3	14.4

Even with the conduits run at their maximum capacity there was a period, approximately from January 26 to February 8, when we were unable to pump the amount of water required, and during which the distributing reservoirs lost about 44,000,000 gallons. During this period we were utilizing to its maximum capacity the new 48-inch force main from the Millburn engine house to the Ridgewood engine house by discharging through it the water pumped by the two new Worthington engines and running them at a pressure about 10 pounds higher than can be carried by the five Davidson engines installed at this station about fourteen years ago. During the winter we had an adequate supply of water from the new watershed, and it was delivered at the Ridgewood Pumping Station mainly through the two 48-inch pipes. In the spring and summer the water supply from the new watershed fell off, thus leaving an excess of conduit capacity unused, whereas in the old watershed we had a slight surplus of water which could not be brought to Ridgewood owing to the lack of conduit capacity. In other words, the excess of carrying capacity of the two 48-inch pipes, due to the depletion of the supply from the new watershed, could not be utilized to carry the slight surplus of water from the old watershed. The reduction in consumption after the severe winter weather was not as rapid as would naturally have been expected, and as the supply materially reduced in the spring months on account of the reduction in the rainfall, we were compelled to draw on the stored water by May 22. The draft from that time on was rapid, as we experienced a drought of several weeks, lasting from May 16 to June 6, during which the rainfall, as shown in Table No. 4, was only 0.57 inch.

Even while drawing as heavily as possible on our water stored in the Hempstead Reservoir we were compelled to supplement the supply pumped by drawing from the distributing reservoirs, and the amount held in these reservoirs had been drawn to such a low point by July 16 that it became imperatively necessary to take steps to curtail the consumption, as a further reduction in the water in the distributing reservoirs would have been dangerous, both in relation to the supply for fire purposes and for domestic and manufacturing uses. The contents of the three Ridgewood basins, together with the New Lots and Mt. Prospect Reservoirs, was, on the morning of July 16, 149,825,400 gallons, which was considerably less than half the contents of these reservoirs at their normal high water line.

The contents of the distributing reservoirs and the Hempstead Storage Reservoir commenced to lower from May 22, on which date the total amount stored was 984,214,300 gallons, this being within about 200,000,000 gallons of the maximum amount that could be stored in these reservoirs. In computing our stored water we do not consider any of the small ponds on the water shed, as the total amount available from these ponds is very slight, they simply acting as receiving basins for the water before it is delivered into the conduits either by gravity or by pumping. The reduction in stored water from May 22 was as follows:

Date.	Total Stored Water.	Reduction in Stored Water.	Average Daily Reduction.
May 22	984,214,300	.....	.....
June 1	912,738,900	71,475,400	7,147,540
July 1	675,110,100	237,628,800	7,920,960
July 9	620,966,000	54,144,100	6,768,012
July 16	490,974,400	129,991,600	18,570,228

The above table shows that the draft on the reservoirs, which represented the difference between the available supply and the demands of consumption, was very nearly a constant average from May 22 to July 9, but that during July the reduction in the supply and the consequent increase in the draft on the stored water was very great. At this time all the driven well stations were in operation and the reduction in the supply was due, not to any falling off in the underground supply, which is not immediately affected by the rainfall, but on account of a falling off in the surface supply. The following table gives the amount of water obtained from surface sources from March 1 to July 15 inclusive, and in preparing this table the amount drawn from or accumulated in the Hempstead Storage Reservoir has been deducted or added, so that the figures represent the actual surface flow utilized:

Average Daily Surface Supply.

1905.	Old Watershed.	New Watershed.	Total.
March	25,157 481	68,733,837	83,891,318
April	23,802,940	58,290,266	82,093,206
May	21,084,186	54,158,023	75,242,209
June	16,651,776	41,787,674	58,439,450
July	13,235,581	30,566,321	43,801,902
July 9 to 15, inclusive	12,078,929	30,825,077	42,904,006

This table shows that there had been a reduction of about 40,000,000 gallons in the surface supply from March and April to July, and as this had only been made up in part by starting driven well stations which had previously been shut down, it can readily be seen why it was necessary to draw on the stored water and why the shortage in the supply resulted.

Reduction of Pressure.

The reduction in the amount of water stored at the Hempstead Reservoir was not as serious as the reduction on the water stored in the distributing reservoirs. The draft on these reservoirs, in spite of pumping the maximum amount that could be carried to Ridgewood under the distribution of supply then existing, had been such that by July 16 we had, as already stated, only 149,825,400 gallons in our distributing reservoirs, and the loss in these reservoirs from July 5 to July 10 had been about 11,000,000 gallons, while the loss from July 10 to July 16 had been 49,641,300 gallons. Had the rate of loss continued, the distribution reservoirs would have been absolutely empty in about eighteen days, and it was therefore imperative to reduce the consumption. This was done by partially closing the head gates at the Ridgewood Reservoir, thus lowering the pressure thoughout the system supplied from the Ridgewood Reservoir. In addition, a few of the large gates in the distribution system were closed, although only for a short time, as it was found to have comparatively little effect on the consumption and might interfere with a proper supply of water for fire purposes. The pressure was afterwards controlled from the Ridgewood Reservoir.

The reduction in pressure was continued until about August 14, when the increase in the supply, due to the rainfall occurring between July 16 and August 14, had been sufficient to warrant an increase in the pressure, although even then the normal pressure was not restored. In the latter part of August the pressure was again reduced, especially during the night hours, i. e., from 10 p. m. to 6 a. m. The heavy rains of September 2, 3 and 4 made it possible to increase the pressure to practically normal between the hours of 6 a. m. and 10 p. m., a reduced pressure being carried during the night time. From this time on it was not necessary to seriously reduce the pressure in the day time, although the pressure from about 10 p. m. to 6 a. m. was kept below the day pressure for the remainder of the year, the period during which the reduction in pressure was made being somewhat shortened as the supply increased.

The reduction in consumption, due to the action taken in partially closing the head gate, is shown by the following table:

Date.	Average Daily Consumption of Ridgewood Water, Based on Corrected Pump Displacement.*	Approximate Reduction in Consumption Due to Reduced Pressure, Based on Supply from July 1 to July 16.
July 1 to July 16	111,708,000	.....
July 17 to July 31	105,464,000	6,244,000
August	105,169,000	6,539,000
September	104,539,000	7,169,000
October	106,160,000	5,548,000
November	104,639,000	7,069,000
December	109,649,000	2,059,000

Serious inconvenience and some suffering was caused by the reduced pressure during the day time in the Summer months, and in the higher section of the borough supplied by the Ridgewood system no water was obtained in the upper floors. To reduce as much as possible the inconvenience caused by the decreased pressure, the high ground surrounding the boundary of the Mount Prospect and New Lots systems, and which had previously been fed by the Ridgewood Reservoir, was placed on the other system, thus giving these sections a pressure higher than they had been accustomed to previous to the general reduction in pressure. There was no report of any factory or other place where water was used for commercial purposes being greatly interfered with by the reduction in pressure, and the most serious effect of the shortage was, therefore, the inconvenience to many of the citizens and the indirect loss to the borough necessarily resulting when there is any doubt as to the adequacy of the water supply. Uuder such circumstances, the questions naturally arise:

Could not this shortage have been foreseen, and if foreseen, why were not the proper measures taken to prevent it, and who is responsible for its occurrence?

A full and specific answer to these questions, which will leave no doubt in the minds of our citizens, is due to them, as well as to this Department, and is all the more pertinent in view of the severe criticisms of and unwarranted attacks on the administration of this Department in the Borough of Brooklyn, and particularly on that of the Engineer's Bureau, by some individuals and organizations, evidently unacquainted with the facts and who seem, unfortunately, to have been too ready to lend a willing ear to unwarranted, if not malicious, gossip. In times of public excitement such as that naturally caused while the water pressure was reduced in our borough, logical reasoning, and cool, deliberate examination readily give way in the minds of many to an impulsive tendency which, when on the eve of an important and bitterly contested election, might, perhaps, be characterized, on the part of some, as a convenient political expedient, to pick out some individual or group of persons on whom to unload full blame and responsibility for all the sins of omission and commission, and evils resulting therefrom, with little or no regard to the dictates of justice, equity or even plain common sense. However absurd, this mode of procedure, undoubtedly, is by no means rare, and certainly obtained in the present case. The answer to the question above propounded is, that the shortage experienced last summer could be and was foreseen, and that due warning to prevent it was given by the Chief Engineer of the Department over two years before it occurred; that the Chief Engineer, furthermore, prepared proper and complete plans for the execution of works which would have increased the supply much more than enough to prevent the shortage experienced; that these plans and specifications were fully completed, bids received and contracts awarded sufficiently in advance to secure the completion of works yielding a supply much more than adequate to prevent any shortage, long before such an additional supply was actually required for that purpose; that, therefore, had these works, or even a certain portion of them, been duly completed, as they easily could have been, absolutely no shortage of water would have been experienced in Brooklyn last summer; that the extraordinary delay in the completion of these works was the cause of the shortage, under the existing conditions; and that this delay was exclusively due to the failure of the City (through the Law Department) to give to the contractors possession of the land required for the construction of the works, said land having to be obtained under condemnation proceedings, of which the Law Department had exclusive charge; lastly, that neither the Chief Engineer of the Department of Water Supply, Gas and Electricity, nor the Department itself, have, therefore, the slightest responsibility for the shortage experienced last summer.

In view of the importance of the question raised, its public interest, and the degree of notoriety it reaches, it seems proper to supplement the foregoing general answers by more specific statements.

Thus, by reference to the quarterly reports ending September 30, 1902; June 30, 1903; September 30, 1903, and to the annual report for the year 1902, it will be seen that the Chief Engineer recommended the construction of seven new stations along the watershed and the retention of the Spring Creek and Jameco Stations, these nine stations, with the Millburn Station, to take the place of all the existing stations on the watershed, the Wantagh and Massapequa Stations being among those so recommended. For the stations within the borough limits, it was recommended that the Gravesend and New Utrecht Stations be consolidated by enlarging the Gravesend Station, and that the New Lots Station be remodeled and enlarged, utilizing the deep well supply.

The maps of the land required for the Wantagh infiltration gallery were approved by the Board of Estimate on July 14, 1903. The contract was signed on June 27, 1903, and the work was to be completed in February, 1904. Under the contract, the contractors were required to begin work at the central well (where the land was already owned by the City) and to pump therefrom into the conduit constantly during construction, so that a quantity of water, ever increasing as the gallery was extended, was thus available for the City supply from the very beginning of this work until its completion, in February, 1904. Under the plans of the Chief Engineer, the supply from this infiltration gallery would be available partly towards the end of 1903, and in its entirety by the end of February, 1904. The yield of this infiltration gallery (exceeding the estimate made before construction), according to results already obtained, would have been and will be about 10,000,000 gallons daily. This additional yield would not have been required for the supply in 1904, but would have been useful to enable us to shut down and overhaul and improve some of the driven well stations, which we had to keep in service for lack of that reserve. That the work was planned sufficiently in advance to prevent a shortage is, therefore, obvious. Even if this infiltration gallery had not been completed until the latter part of May, 1905, or considerably over one year after the time fixed in the contract, the additional supply therefrom would have been more than ample to prevent the shortage last summer. Thus, on the basis of 10,000,000 gallons daily, we would have had, say from May 22 to July 16, 580,000,000 gallons. If this amount be added to the 490,000,000 gallons in storage at that date, we would have had a total storage of 1,070,000,000 gallons, which is somewhat over the total aggregate maximum capacity (available) of our Hempstead storage and distributing reservoirs, while the additional 10,000,000 gallons daily available during the remainder of the summer would have given us more than sufficient water to keep all of our reservoirs full, even after deducting all the water that was saved by the reduction in pressure and consequent reduction in the consumption, and to supply the full demands of consumption. But the Wantagh infiltration gallery, owing to the failure of the City to give the land to the contractors, was not completed in February of 1904, as provided under the contract, nor in May of 1905, as assumed in making the previous calculations, and, in fact, has not been completed yet, nor do we expect it to be completed until the spring or early summer next year. The facts relating to this extraordinary and unfortunate delay in the completion of the Wantagh infiltration gallery, are a matter of official record and have been fully given in a recent report by me, from which I proceed to quote, i. e.:

"The contract for the Wantagh infiltration gallery was forwarded to the Deputy Commissioner for Brooklyn on March 24, 1903; the printer's proof was received May 1, 1903, and it was corrected and sent back on May 2, 1903. A second printer's proof was received May 15, 1903, and returned on the following day. On May 26, 1903, the printed forms of contract and specifications were received, and on June 16 the bids

* Owing to the necessity of keeping the pumps in constant operation, the slip was increased, so that a reduction of 4 per cent. has to be made from the pump displacement as originally figured.

were opened and canvassed. The contract was signed on June 27 with the New York Continental Jewell Filtration Company, who were the lowest bidders. Under the contract, the infiltration gallery was to be completed in 150 consecutive working days, and the contractors were notified July 21, 1903, to commence work on July 27. Assuming 150 working days to represent 7 calendar months, the work should therefore have been completed in February, 1904. The map of the lands required for the infiltration gallery at Wantagh was forwarded by me on April 2, 1903, with a full explanatory statement, and on May 6, 1903, additional white prints of the map were forwarded, in compliance with a request. On July 14, 1903, a copy of the map, with certain amendments, was forwarded, together with memoranda relating thereto. On that same day the Board of Estimate and Apportionment approved the map and it was signed on the following day by the Mayor. The Assistant Corporation Counsel in charge in the Borough of Brooklyn was Mr. James McKeen, who placed the condemnation proceedings in charge of his assistant, Mr. J. W. Coombs. At the latter's request, made November 17, 1903, we furnished him, on November 19, 1903, with a full written description of all the parcels of land covered by the map. In view of the delay in acquiring the land, I had, on November 16, sent a letter to Deputy Commissioner Van Iderstine calling his attention to this delay and stating that the work would have to be stopped within a week's time unless the land was immediately acquired. In the meantime, repeated efforts had been made both by myself and the Assistant Engineers in this Bureau, as well as by the contractors, the New York Continental Jewell Filtration Company, to hurry up the work of condemnation, and had several interviews with Assistant Corporation Counsel Coombs in the matter. Mr. Coombs repeatedly stated to the Assistant Engineers, to the contractors and to me that there would be no unnecessary delay in acquiring it, and about the beginning of March, 1904, he assured us that the advertisements had been inserted and that he was about to make application for the appointment of Commissioners. In the latter part of March he added that he had already made the application to Judge Kelly for the appointment of the Commissioners, and during April he informed us that Judge Kelly had heard arguments and reserved decision. Mr. Coombs was taken sick, as I am informed, in May, 1904, and as the land was not available and the contractors had practically abandoned the contract, being unable to continue the work, and advised us that they would refuse to complete it, we investigated the matter and found that there was no foundation whatever for the statements that had been made to us by the Assistant Corporation Counsel in regard to the condemnation proceedings and that no steps whatever had been taken in the matter by the Law Department, so that it was necessary to begin then the necessary proceedings to acquire the land.

And it may be well to add that on the east side, by securing an agreement to enter a small plot of land belonging to Miss Fannie Low, we would afterwards continue the infiltration gallery for quite a length through public streets and roads, and that I had particularly called Mr. Coombs' attention to that fact and asked him to obtain in some form permission to enter that plot, with the result already shown. After we had ascertained that nothing had been done by Mr. Coombs, Mr. Edward H. Wilson of the present Corporation Counsel's office was put in charge of the work, and on September 20, 1904, application was made before Judge Maddox for the appointment of Commissioners, who were appointed September 23 and filed their oaths on September 28, 1904. Mr. Wilson, however, acting on our request to secure permission to enter the plot of Miss Fannie Low, above mentioned, had, on July 21, obtained such permission and thus facilitated the continuance of the work. We immediately notified the contractors to go ahead. The latter demurred, utterly refused to proceed with the work and claimed that they had been subjected to great loss. They agreed, instead of beginning legal proceedings, to obtain a preliminary opinion from our Corporation Counsel as to their rights, and after due examination the Corporation Counsel decided that they were legally bound to continue the work, in spite of the extraordinary delay there had been in giving them possession of the land. These proceedings took considerable time before the matter was finally settled, and the contractors ultimately agreed to go on with the work under protest, and have done so, renewing their protest whenever required. It is not probable now that this infiltration gallery will be completed before spring. It is evident that the conduct of Assistant Corporation Counsel Coombs, the reasons for which we do not pretend to give, is entirely responsible for the delay in the completion of the Wantagh Infiltration Gallery and for all the consequences that have followed from that delay, including a possible if not probable lawsuit with the contractors."

The proposed infiltration gallery at Wantagh and the unwarranted delay in its execution have been fully discussed in order to fix the responsibility for the shortage last summer and to demonstrate the ample adequacy of the plans duly prepared by the Chief Engineer and approved by this Department to prevent such a shortage. The sufficiency of these plans can be still more conclusively shown by bearing in mind that in arriving at the foregoing conclusions no account has been taken either of the yield from the Massapequa infiltration gallery (larger in itself than that from Wantagh), or of the additional supply from remodeling Gravesend and New Lots, all of which, however, formed part of the plans prepared in due time by the Chief Engineer.

It may be well to add that the history of the Massapequa infiltration gallery shows delays similar to those in the case of Wantagh, the title to the required lands not having vested in the City until January 18, 1905, or more than eighteen months after this Bureau forwarded the map of said lands, on June 26, 1903; that in the case of Gravesend the advertising of the contracts was delayed by difficulties with the architects for the building, for which this Bureau was in no way responsible; and that with regard to New Lots, the appropriation of $160,000 asked by the Chief Engineer for that purpose and which formed part of a general appropriation of $2,045,000 asked in March of 1904 was not granted until October of the same year and was then reduced from the above amount to $920,000, in spite of which reduction, however, the Chief Engineer determined to use from the reduced amount granted the $160,000 required for the development of the New Lots Station.

Emergency Plants.

In deciding upon extraordinary measures to relieve a shortage, it must be borne in mind that the plea of "emergency needs" may be classified as extravagance and recklessness, and that the Commissioner, as well as the Chief Engineer, properly hesitate to accept a responsibility which a few showers may soon prove to have been hastily assumed, which must begin by disregarding, at least temporarily, Charter provisions in regard to the award of contracts and payment of expenses, and which is increased by the fact that the cost of work under such conditions is always higher and the operating expenses much higher than normal. Had we been able to foresee the scantiness of the usual fall rains we would certainly have started our emergency plants in the spring, but, without such previous knowledge, it did not appear advisable, under the conditions then existing, to spend the City's money without any legal authority in constructing stations which might never be used. The emergency work was, therefore, gradual, although by no means slow, when circumstances clearly showed it would be required.

Thus, at the first clear indication of a shortage in the supply, the driven well gangs of the Department were worked for twelve hours a day, and the result of that work was as follows:

At the Spring Creek Station the supply was increased from about 3,000,000 gallons daily in June to between 7,000,000 and 8,000,000 gallons daily in November.

The deep wells at the New Lots Station were connected with the main suction on July 1 and all the water (although in small quantity) which could be obtained from them under the existing conditions was utilized.

New wells were sunk at Oconee and the existing wells at Clear Stream and Forest Stream were cleaned. The wells of the stations on the new watershed had recently been overhauled, so that they were in good condition.

When the lack of fall rains proved that no relief could be expected, plans which had been under consideration were immediately drawn and contracts entered into for the following works to relieve the shortage in the supply:

Six (6) temporary pumping plants along the line of the Massapequa gallery.
Additional wells in connection with these pumping plants.
Temporary pumping plant at the Hempstead Storage Reservoir.
New driven well station on the conduit line at culvert N.
Similar station on the conduit line at culvert L.
New shallow wells at Jameco and pumping from deep wells at Jameco by the air-lift system.
New driven well station on the conduit line at culvert D.
Starting the temporary pumping plant at Spring Creek.
Installing a temporary pumping plant at New Lots.
Placing additional shallow wells and a new suction line at the Gravesend station.
Ordering an increased supply from the Queens County Water Company.

The Chief Engineer necessarily assumed (with the subsequent sanction of the Commissioner) the responsibility of ordering the work under these contracts before obtaining the authorization from the Board of Aldermen for expending without public letting $50,000 needed for constructing temporary works, and $20,000 for running temporary plants. The requests to authorize this work were made on November 1 and 20, and the Board of Aldermen authorized the expenditure of $20,000 for constructing plants, and $20,000 for running some of the stations on December 19, and on December 26 authorized the expenditure of $30,000 for the emergency plants.

Rapid progress was made on all the emergency work, with the result that by November 26 we commenced to increase the stored water, and there has been practically a steady increase since that date. By the end of the year the emergency plants were yielding about 6,000,000 gallons daily, and an addition of 2,000,000 gallons daily was being obtained from the Queens County Water Company. A conservative estimate of the total yield from the emergency plants would be 20,000,000 gallons daily, and at the end of the year the increase in the supply was such that the pressure at night could be restored to the normal daily pressure, the pressure during the day time having been practically normal since August.

Waste From Supply Ponds.

With the reduced rainfall and the need of utilizing all the supply, we naturally had a very slight waste from the ponds, the total amount wasted from the ponds being as follows:

Month.	Waste from Old Watershed.	Waste from New Watershed.	Total.
January	294,984,300	112,080,800	407,065,100
February	83,030,300	46,949,000	129,979,300
March	294,379 400	124,795,800	419,175,200
April	152,560,200	257,389,000	409,949,200
May	47,618,700	.....	47,618,700
June	2,307,000	.....	2,307,000
July	.....	.....	.....
August	5,639,800	.....	5,639,800
September	57,985.000	.....	57,985,000
October	19,406,000	.....	19,406,000
November	.....	.....	.....
December	.....	.....	.....
Total	957,910,700	541,214,600	1,499,125,300

It will be seen from the above table that there was practically no waste after April, the waste which occurred in the fall from the old watershed being practically due to the diatom growth in the Baiseleys pond, which prevented the filtering of the water for a period covering about two weeks. As long as the driven well stations are kept in continuous operation below the ponds, there is very little wastage from them, as the lowering of the water level in the sands both reduces and retards the flow into the pond.

Conduit Capacity.

The need of additional conduit capacity has been recorded by me in former reports, and our experience of last January and February, previously referred to, showed that there had been too long a delay in taking up this most vital question. A temporary pumping plant can be established on Long Island in a few weeks, but an additional conduit must take months to build, and we will be fortunate if we do not feel the need of the additional conduit before its completion. Plans have been made and contracts and specifications drawn for a 72-inch steel pipe line, which it is expected will extend from practically the City line to Massapequa. Connections will be made by means of cast iron pipes to the distribution system and to the Ridgewood reservoir, with a temporary connection to the Ridgewood Engine House, it being expected to ultimately utilize the conduit by pumping directly from the source of supply under a pressure sufficient to force the water into the distribution system or the Ridgewood reservoir, but prior to the completion of the necessary high duty high pressure pumps it is expected to force the water from some of our stations to the Ridgewood pump well, from whence it will be pumped into the distribution system or reservoir. The first section of the pipe line will extend from the Ridgewood Engine House to a point near Valley Stream, and this section should be completed before the spring of 1907. The construction of the remainder of the line should be commenced before the completion of the first section, so that the entire line can be completed to Massapequa by the end of 1907, or the early part of 1908. This line will provide additional capacity of about 50,000,000 gallons daily, although by working the pumps under a higher pressure an additional amount of water can be forced through the pipe. Surveys and estimates were originally made on the basis of utilizing public highways in which to lay the main, but the Corporation Counsel, in an opinion rendered on July 11, advised the Commissioner that there would be a decided question whether the Charter provision allowing the City to lay mains in the public streets to convey water to the City would be upheld, and, as the City could not afford any delay in the construction of the conduit, it was decided to purchase a right-of-way of sufficient width to accommodate the present and prospective pipe lines, and also to allow for the construction of an infiltration gallery, or continuous line of driven wells. We had already obtained the necessary land from Massapequa to Merrick, and an inspection and study of the conditions indicated that a continuation of this land, in general paralleling and running south of the right-of-way of the Long Island Railroad, would best serve the City's interests. Surveys have been made and the maps are now practically ready to be forwarded to the Board of Estimate and Apportionment for approval. These covered a section of the line running from Stoothoff Neck road to Foster's Meadow road, and the surveys are now being completed covering the additional sections. The conduit will be laid at such a distance from the existing cast iron and brick conduits that there will be no danger of an accident to one interfering in any way with the operation of the other. The appropriation asked by me was $2,750,000, this being based, as previously stated, on the assumption that the lines would be run under the public highway and a large portion of it on high ground, thus allowing a reduction in the thickness of the metal of the pipe. The change in plan will necessitate an increase in the cost of approximately 25 per cent., without allowing anything for land, but the difficulties of construction and safety of the line will be greatly increased by having it located on property entirely under our jurisdiction. The reduction in the appropriation allotted for the work in this Borough has made it necessary to reduce by 50 per cent. the amount to be expended on the pipe line, and the first contract, therefore, covers only a little over one-third of the total length of the line. This new conduit, together with possibly a short conduit of similar diameter laid in the western part of the watershed, will be sufficient to provide for the maximum ultimate development of the watershed on the south side of Long Island west of the Suffolk County line, and also enable us to utilize some water from the western portion of Suffolk County, if it is found that this water can be obtained.

Quality of Supply.

For many years the quality of the Brooklyn supply was unexcelled by any other large city, but with the rapid increase in population on the watershed, and with the admixture of a comparatively large quantity of subsurface water, thus promoting microscopic growth, the supply has deteriorated, so that there has been more or less criticism, some of which has been just. There has been criticism also, due to the stirring up of sediment in the pipes, mainly on account of the pipes being of too small

a diameter to carry the requisite amount of water without an excessive velocity, and the rust and dirt which had collected in the pipe was stirred up and carried to the consumer. During the late spring and early summer the water in the Bay Ridge, Fort Hamilton and Dyker Heights sections was rendered turbid by the change in direction of flow in the mains, due to the heavy consumption in Coney Island, Bath Beach and Bensonhurst, and just complaint was made that the condition of the water was unsatisfactory for domestic use. This condition was remedied to a great extent by blowing off the hydrants, but later in the summer complaints were again made that the supply was polluted and that the typhoid fever, of which, apparently, a larger number of cases than usual were reported, was caused by the water supply. The daily press agitated the question of the supply and, by the articles published, created in the minds of the citizens a distrust of the public water supply, to such an extent that it was deemed advisable to have an investigation made by an expert not connected with the Department. Commissioner Oakley requested Dr. E. J. Lederle, Commissioner of Health from 1902 to 1904, to undertake this investigation, and on October 31 he made a full report, from which the following extracts are taken:

"The investigation made by us included personal inspections of the principal sources of supply and the watersheds in the immediate vicinity of these sources, inspections of the reservoirs at Prospect Park (Mount Prospect Reservoir) and the Ridgewood reservoir and the pumping stations along the line of the conduit, from Oconee to the most easterly point of the shed, Massapequa pond, near the Suffolk County line; also the following filtration plants:

"At Jameco (Baiseley's pond), a mechanical filtration plant.

"At Forest Stream, slow sand filter.

"At Hempstead storage reservoir, slow sand filters.

"The infiltration gallery systems at Wantagh and Massapequa.

"The laboratories of your Department for chemical, bacteriological and microscopical investigations and routine examinations of water, located at the Mount Prospect Reservoir, and known as the Mount Prospect Laboratory, were visited and a careful study made of the appliances used, the methods of examinations employed, the systems of recording, filing and compiling the results of the examinations made.

"In the Thirtieth Ward, inspections were made of all local sources of water supply, exclusive of individual wells (if such exist)."

* * * * * * * * * * *

"Of the surface supplies about 12 per cent. is filtered by artifical means, either by slow sand or by mechanical filters. Of the whole supply then 55 per cent. is from underground sources and filtered surface water and 45 per cent. is from surface supplies not filtered.

"It may be of interest to explain why we class the underground and the filtered supplies together. Practically all of the underground supply of Brooklyn comes from a sandy soil of a nature peculiarly favorable to the purification of water which passes through it. This fact has been repeatedly demonstrated by scientific tests. An underground supply then from such a source, with properly constructed and installed tube wells of sufficient depth and excluding all direct entering surface water, or infiltration galleries, will be one which has been naturally thoroughly filtered and which is safe and wholesome. Surface supplies are subject to direct pollution, depending on the character of the watershed, the extent of the population and the proximity of nuisances to the streams and ponds."

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"Under the immediate supervision of the chemist, the superintendent of conduits and reservoirs, aided by a corps of assistants, makes systematic inspections of the streams, ponds and reservoirs, and the lands adjacent thereto, on the watersheds, particular attention being given to those sections most liable to danger of pollution."

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"This system of inspection and the methods employed for the protection of the purity of the water supply appeared to us to be comprehensive and, so far as we were able to judge, the work was carefully and conscientiously carried out.

"For the further protection of the supply there have been established at certain points on the watershed, as stated before in this report, filter plants; in some cases, sand filters; in others, mechanical filters. Even in those sections where the filters have been installed the system of inspection and the use of pans in the privies has been continued, and very properly so.

"In 1903, the construction of a new system of collecting underground water was begun, known as the 'Infiltration gallery system,' consisting of vitrified terra cotta pipe, laid at a certain depth, usually about twenty feet below the surface, in the saturated sand and gravel and at right angles to the normal underground flow. The underground water enters the pipes at the open joints, which are loosely covered with sand and gravel, and flows to a central well, from which it is pumped into the conduit. Numerous tests, made by competent authorities, have shown this water so collected to be of excellent quality. We know from personal observations that much has been accomplished year by year to improve the sanitary conditions of the Brooklyn water supply.

"Since the early part of 1902, when the writer made an inspection of the watershed, the following important improvements have been completed. Mechanical filter plants, to filter the water from Baiseley's and Springfield ponds, were installed and accepted by the City in the summer of 1904; these plants now delivering about 7,000,000 gallons of water filtered from localities which were previously a serious menace to the community, the watersheds having been protected only by inspections, and the panning of privies."

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"Every large water system should be under the direct control of such skilled supervision, and should have the benefit of the results of systematic tests and investigations of a well equipped chemical, bacteriological and biological laboratory.

"The main laboratory of your Department, located at the Mount Prospect reservoir and known by that name, was established some years ago and was for a long time used solely for Brooklyn—its operations are now extended to all of the boroughs of the City.

"It is probably the most complete water laboratory in this country, if not in the world."

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"Without going into the details of the equipment and management of this laboratory at this time, we would state that we found it to be provided with the most modern appliances and equipments known to science, that the methods employed were those approved by the best authorities and that an enormous amount of chemical, bacteriological and microscopical work of the highest order was carried on there and what is perhaps as important, that practical application was being made of such scientific information."

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"By means of the chemical and bacteriological tests, the purity and wholesomeness of the water at all points of the system may be determined, and valuable information obtained of the relative purity of the waters from different localities, and whether or not methods of purifications must be provided."

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"In making an investigation of the water supply of Brooklyn, and particularly of the Thirtieth Ward, you will probably expect us to take some notice of an outbreak of typhoid fever, which occurred in that ward in the month of August last, this outbreak causing at the time great alarm and widespread publicity.

"A systematic investigation of this outbreak was not within our province, and for complete data in relation thereto we must await the report of the investigations which are being made by the Department of Health. Pending that report, we are not in a position to discuss, in detail, the bearing this outbreak has on the question of the purity of the public water supply, as compared to other possible sources of infection; at the same time, it is our opinion, after a careful personal inspection of the water supplies of that section of the City, including a study of your records of the systematic examinations, chemical, bacteriological and biological, of their supplies, and from the results of our own examinations of their supplies, that the outbreak was not caused by the public water supply."

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"In conclusion, we would state briefly in answer to your three questions:

1. "Inspection of the watershed and sources of supply and measures taken to abate nuisances and guard against pollution.

"That of your whole Brooklyn supply 55 per cent. is from underground sources and filtered surface water, and 45 per cent. from surface supplies, unfiltered."

"The plan which your Chief Engineer has prepared for the further improvements of your water supply should be carried out at the earliest possible time."

"Your water laboratory is very complete, well equipped and has in its service trained men of recognized ability, who are doing excellent work.

3. "Special reference to the supply furnished to the Thirtieth Ward. From personal inspections made of all sources of water supply of this district and from the examinations made of the water of the supplies, we are of the opinion that the supplies are in good condition, that the water is of good quality and that there is no cause for alarm."

This report shows that the supply of water was not dangerous in any way and a great many of the typhoid cases were from sections where the water was supplied by the driven well stations at New Utrecht and Gravesend, which was practically a sterile water.

The quality of the supply has been improved by the addition of the mechanical filters at Baiseleys and Springfield ponds, and of the slow sand filters at Forest Stream and Hempstead Reservoir, together with the larger percentage of driven well water. Since the early summer the total supply has been made up of about 40 per cent. of unfiltered surface water and about 60 per cent. of either naturally or artificially filtered water. Of the 40 per cent. a comparatively large proportion has, for the greater part of the time, been drawn from the Hempstead storage reservoir, which can be considered really as a filtered supply, as the water in this reservoir is derived entirely from springs and the City owns all the land surrounding the reservoir, thus cutting off danger of pollution.

In my annual report for the year 1896 I recommended the filtration of the surface supplies, and have endeavored since that time to filter all supplies which were in any way dangerous. The present demand is for an entirely filtered supply, and we can meet that demand in part by utilizing our driven well stations continuously, even though we waste a portion of the surface supply. It is proposed to do away, within the next two years, with all unfiltered surface supplies by the construction of works to develop to the utmost the underground supply, which will reduce materially the surface supply; the remaining surface supply will be filtered and we should, therefore, in the near future, have a supply entirely free from any water which has not been efficiently purified. I deem it important to develop the supply in such a way as to filter naturally the maximum amount of the supply possible, as, no matter how efficiently a filter may be built, the quality of the water must depend upon the efficiency of the maintenance and operation, and, with the conditions existing on Long Island, where we have practically a natural filter, the logical method of obtaining the water would be by abstracting it from the sand and allowing the water which has already entered the streams to seep back into the sands and thus reach the works constructed to utilize the underground supply. With the increase in the percentage of either naturally or artificially filtered water, there will probably come the necessity of covering our distribution reservoirs, and it is planned to cover in the near future the Mount Prospect reservoir and subsequently to cover the Ridgewood basins. Upon the completion of this work the water obtained will not be exposed to the light of day or be subect to any contamination from the time it leaves the ground, cool, clear and sparkling, until it reaches the consumer. We will then have a supply of exceptional purity and freedom from possible contamination.

Additions to and Improvements in the Supply.

On April 11, 1905, request was made for the following appropriations to improve the supply:

Item.	Proposed Works.	Estimated Cost.
1.	New conduit from Massapequa to Ridgewood reservoir	$2,750,000 00
2.	Remodeling Ridgewood engine house	650,000 00
3.	Extension of distribution	200,000 00
4.	A driven well plant within the borough limits, including a connecting main with the distribution system	275,000 00
5.	Watts pond infiltration gallery	100,000 00
6.	Infiltration gallery at Oconee	200,000 00
7.	Removing and relaying small tuberculated mains	200,000 00
8.	Boundary trunk mains for the Mount Prospect system	170,000 00
9.	Trunk mains through the old Long Island water supply system, in the Twenty-sixth Ward	70,000 00
10.	Additional hydrants on existing large mains	50,000 00
11.	Filter beds for Valley stream	75,000 00
12.	Filter beds for Schodack brook and Pines pond	50,000 00
13.	Land on the watershed for protection from pollution	200,000 00
14.	Coal sheds for the Millburn pumping station	100,000 00
	Total estimated cost	$5,090,000 00

The list covered some of the works for which appropriations had been requested during the previous year, the total appropriations requested in 1904 amounting to $2,045,000, of which only $920,000 was allowed. I recommended that this money be expended for the following works:

Water mains, hydrants and appurtenances, say	$455,000 00
Lands for extension of Gravesend pumping station	25,000 00
Remodelling of New Lots station, i. e., new buildings, engines, deep well plant, force main and removal and re-erection of standpipe, etc.	160,000 00
New engines and boilers at Ridgewood pumping station, south side	85,000 00
New buildings and boilers, Ridgewood pumping station, north side, this being a portion of the work of remodelling the station which has been previously planned and approved	195,000 00
Total	$920,000 00

Contracts have been made and most of them let to carry out the work then recommended. The amount allowed by the Board of Estimate and Apportionment in 1905 was $3,390,000, in place of the $5,090,000 requested. The resolution of the Board was passed on June 23, 1905, but no action was taken by the Board of Aldermen, and it is probable that the present Board will have to take action on this appropriation before the money is available. The contracts to cover the work have been pushed forward and many of them will be ready for advertising before the money is available.

The contractors for the Wantagh gallery have carried on the work at a much slower rate than was desirable, but on account of the long delay in obtaining the land the contractors claim that no contract exists between them and the City and refuse to increase their rate of progress. The gallery has been sufficiently completed, however, so that we can obtain at present between 8,000,000 and 9,000,000 gallons daily, the water being of most excellent quality.

We have in addition to the supply obtained from the Wantagh gallery the supply obtained by running the Forest stream filter beds, and thus utilizing the flow of Simonson's stream, which had to be cut off for the greater part of 1904 on account of the pollution of the water.

The contract for the Massapequa gallery was let in the summer, and the contractor, Mr. M. J. Dady, entered into a supplementary agreement with the City to install not less than six temporary stations along the line of the gallery, from which the water could be pumped into the conduit. Three of these stations were put into use before the end of the year, and we derived from them a much needed addition to our total supply.

The contracts for remodelling the Gravesend and New Lots stations have been let and progress made, but no addition to the supply has yet been obtained from them. Five deep wells at the New Lots Station were put into service July 1, and later in the summer one of these wells was cut out on account of the new pumping station interfering with the suction main.

The driven well gangs have been kept on the work of repairing and replacing our wells.

Reference has already been made to the emergency stations and work done at the other stations under an emergency appropriation. The three driven well stations at culverts D, L and N will be kept in use until the development of the watershed along the broad lines now proposed has been accomplished, so that the water to be obtained from these stations would then be obtained from the new works.

The total increase in the supply during the year from the various works which have been put into use or developed since January 1 has been approximately as follows:

	Gallons.
Wantagh infiltration gallery	8,500,000
Massapequa infiltration gallery	5,000,000
Forest Stream filter beds	3,000,000
Station L	1,250,000
Oconee	700,000
Spring Creek	4,000,000
Total	22,450,000

In addition to this amount the stations to be established, together with the increase to be obtained from the present stations by the emergency work being done, should yield, on a conservative basis, about 20,000,000 gallons daily, and this should all be available by the end of February.

Provision to Be Made for the Future Needs of the Borough.

On September 20, 1905, in answer to request made by Messrs. William H. Burr and John R. Freeman, Consulting Engineers of the Board of Water Supply, I wrote to them a letter on the needs of the Borough and the plan to be followed in developing the present watershed, from which I quote as follows:

"Messrs. WILLIAM H. BURR and JOHN R. FREEMAN, Consulting Engineers,
Board of Water Supply, No. 299 Broadway, New York:

"Gentlemen—I send you herewith the information which, at our interview a few days ago, you requested me to furnish you on the following points, i. e.:

"1. Present and estimated future consumption.
"2. Present minimum daily supply in Brooklyn.
"3. Increase in average daily supply since January 1, 1904.
"4. Proposed general method of development of the present watershed and prospective increase in supply expected therefrom.
"5. General description of infiltration galleries at Wantagh and Massapequa and expected yield therefrom.
"6. Additions to distributing reservoirs within the borough limits.

"The consumption per capita in the Borough of Brooklyn has always been smaller than that of other large cities, owing to a relatively low general pressure, and also to the effect of frequent warnings to consumers to check waste, when the supply was unequal to the demand. In recent years the daily consumption per capita has ranged from 84.1 gallons in 1895 to 94.3 gallons in 1904, the average daily consumption in each year being shown in the accompanying table. (Table No. 1.)

"The comparatively high per capita consumption during the present year (94.3 gallons) will be noticed. The abnormal increase has been due to the addition of large mains to the distribution system.

"The increase in population has been very constant, averaging 3.4 per cent. per annum during the last twenty years, as shown by the United States census for 1880, 1890 and 1900. Assuming this rate of increase in population and an increase in consumption of 1½ gallons per capita for every year, the estimated consumption up to the end of 1915 will be as shown in the accompanying table. (Table No. 2.) The figures given in this table are based on the normal increase as determined from past experience. It is well known that these results may be materially changed by altered conditions, more or less restriction of waste, increased pressure, rapid development of outlying districts, etc.

"'Consumption' herein is and must be understood as representing the actual use of water, plus waste, plus any errors of measurement.

"On the basis of the readings of 1894, an unusually dry season, the dry weather surface supply from the old watershed amounted to about 24,000,000 gallons per day. Adding thereto the supply from the present driven well stations, amounting, in round figures, to about 30,000,000 gallons per day, we have for the total minimum daily supply from the old watershed 54,000,000 gallons.

"The minimum surface supply from the new watershed, based on the gaugings of 1894, already referred to, was 26,000,000 gallons, and adding thereto for the net increase from the five driven well stations, say 10,000,000 gallons, and 5,000,000 gallons more at present obtained from the Wantagh infiltration gallery, we have a total minimum daily supply from the new watershed of 41,000,000 gallons.

"The total safe minimum daily supply from both watersheds may, therefore, be estimated at 96,000,000 gallons. As our present daily consumption is normally about 125,000,000 gallons, the minimum supply above figured would show a deficit of about 29,000,000 gallons daily. It should be borne in mind, however, that these figures are based on gaugings taken during the dryest summer registered within seventy years, and do not represent, therefore, the normal daily supply that may be obtained from our watersheds."

In this letter it is stated that the underground supply will be fully developed, and that when this is done and the present watershed is developed to its utmost, the minimum daily supply will be about 138,000,000 gallons, and that 18,000,000 gallons per day additional will be obtained from three stations within the city limits.

"I am at present studying a plan, already recommended, for a connection between the Manhattan and Brooklyn systems which, if the water can then be spared from the Borough of Manhattan, may avoid a repetition of the present shortage if it were to occur before the completion of the works for the larger supply for the whole City. A similar connection between the systems of Brooklyn and Queens, which I have already planned and which can easily be made, will likewise provide for similar conditions in Queens, if a small supply can be furnished from the Brooklyn system; and, ultimately, a connection should also be established between the Boroughs of Brooklyn and Richmond.

"It will readily be seen that a small percentage of the Manhattan supply would be sufficient to greatly aid Brooklyn, in case of a temporary shortage, and the same remark applies with greater force to the Boroughs of Queens and Richmond."

TABLE No. 1.

Showing Average Daily Supply of Water to the Borough of Brooklyn from the Public System and Private Companies from 1895 to 1905, Inclusive.

Year.	Ridgewood Supply, Gallons.	Gravesend and New Utrecht Supply, Gallons.	New Lots Supply, Gallons.	Total Public Supply, Gallons.	Flatbush Water Works Company Supply, Gallons.	Blythebourne Water Company Supply, Gallons.	German-American Improvement Company Supply, Gallons.	Total All Supplies, Gallons.	Percentages of Increase.	Population.	Average Daily Consumption Per Capita, Gallons.
1895	75,735,022	*3,000,000	*3,000,000	81,735,022	1,195,980	*400,000	*72,000	83,403,002	...	992,000	84.1
1896	80,961,149	2,909,021	*3,000,000	86,870,170	1,270,018	*485,000	*72,000	88,697,193	6.3	1,025,000	86.5
1897	86,929,834	3,303,622	*3,000,000	93,233,456	1,515,587	*570,000	*72,000	95,391,043	7.5	1,060,000	90.0
1898	90,054,503	3,508,728	*3,000,000	96,563,231	1,770,448	*655,000	*84,000	99,072,679	3.8	1,096,000	90.4
1899	92,298,942	3,564,629	*3,000,000	98,863,571	2,150,917	*740,000	*84,000	101,838,488	2.8	1,134,000	89.8
1900	86,963,899	4,917,217	3,724,605	95,605,721	2,481,150	*825,000	*84,000	98,995,871	...	1,167,000	84.8
1901	88,020,881	4,842,227	3,857,495	96,720,603	2,875,035	*910,000	*84,000	100,589,658	1.6	1,206,000	83.4
1902	92,255,026	4,342,538	3,707,921	100,305,485	3,173,857	*995,000	*84,000	104,558,342	3.9	1,247,000	83.9
1903	96,775,761	4,176,859	3,794,827	104,747,447	3,638,933	*1,080,000	*108,000	109,574,380	4.8	1,290,000	84.9
1904	104,315,971	4,769,922	4,063,224	113,149,117	4,444,462	*1,165,000	*254,000	119,012,579	8.6	1,334,000	89.2
1905	114,260,804	4,601,105	4,275,841	123,137,750	5,227,254	*1,250,000	*400,000	130,015,004	9.3	1,379,000	94.3

The figures marked thus * are estimated on the basis of the best information obtainable.

The Gravesend and New Utrecht systems were acquired by the City in the latter part of 1895. The Complete records date, however, from January 1, 1896.

The New Lots system was acquired by the City on April 9, 1900. The records, however, date from May 1, 1900.

The average daily consumption for 1905 is based on the first six months of the year.

The decrease in consumption between 1899 and 1900 was due to reduced pressure, caused by inadequate supply. The annual rate of increase from 1895 to 1899, both inclusive, was 4.1 per cent.; the rate from 1900 to 1905, both inclusive, was 4.6 per cent.; the rate from 1895 to 1905, both inclusive, was 4.1 per cent.

TABLE No. 2.

Showing Estimated Population and Average Daily Supply of Water Required for the Borough of Brooklyn from 1905 to 1915, Inclusive.

Year	Population.	Consumption per capita Gallons.	Average daily consumption. Gallons.
1905	1,379,000	94.3	130,000,000
1906	1,426,000	95.8	136,600,000
1907	1,474,000	97.3	143,400,000
1908	1,524,000	98.8	150,600,000
1909	1,576,000	100.3	158,100,000
1910	1,630,000	101.8	165,900,000
1911	1,685,000	103.3	174,100,000
1912	1,742,000	104.8	182,600,000
1913	1,602,000	106.3	191,600,000
1914	1,863,000	107.8	200,800,000
1915	1,926,000	109.3	210,500,000

From the above it will be seen that in order to provide for the demands of the borough it is imperative that immediate steps be taken to obtain a supply from sources outside of the existing watershed, and it may be added that there is no other source that, if legal restrictions be removed, can be made available in time to prevent a serious shortage, both in Brooklyn and in Manhattan, than the waste waters from Suffolk County. I have so frequently recommended that steps be taken to test the constitutionality and applicability to Brooklyn of the Burr Law, that it hardly seems necessary to repeat this recommendation. This matter might probably be brought before the Courts and the law tested by building works that would take some of the water from Suffolk County into our ponds and conduits. As in case of litigation the proceedings probably would be protracted, and as, even if there be no opposition, the construction of the works requires time, we should lose none in determining whether or not the water from Suffolk County is available. The determination of this point, while of extreme importance for Brooklyn, is still more important for Manhattan and The Bronx, where special conditions are such that it would be impossible to await the completion of the larger works in the Catskill region to provide an adequate water supply, and in the meantime no other one at hand seems available at present except that from Suffolk County.

Waste Surveys.

While special emphasis must be laid on the additional supply required, we must not overlook the necessity of preventing as much as possible waste of the existing supply. In previous reports, more especially in my report of 1902, I have dealt rather fully with this question, and recommended as the most efficient means of reducing the supply the introduction of meters. As this recommendation does not at the present time seem to be one that would be supported by public opinion, except under extreme conditions, I determined to try a house-to-house inspection, and, through the courtesy of Mr. William R. McGuire, Water Registrar, was able to utilize seventeen of his Inspectors for this work. Inspection was made of the district bounded approximately as follows:

Nostrand avenue, Myrtle avenue, Washington street, East river, Navy Yard and Flushing avenue.

This district covered a little over 6,000 buildings, the majority being low class flat houses, the population being mainly of foreign birth. The results of the inspection showed the following leaks from defective plumbing:

Water closets	426
Taps	384
Total	810

The leakage, as estimated by the Inspectors from inspection only, amounted to:

	Gallons
From water closets, per twenty-four hours	211,000
Taps, per twenty-four hours	155,000
Total per twenty-four hours	366,000

The Inspectors also report that they found considerable waste due to carelessness, or design, of tenants in opening cocks and permitting the water to run to waste. In these cases the tenants were cautioned and the waste stopped. The leakage from this source, plus that covered by defective plumbing, should bring the total estimated waste not far from 500,000 gallons per day for this district. The district covers an area of 0.91 square mile. Owing to the necessity of utilizing the Inspectors on the fire hydrants during the winter months, the work was discontinued and it is proposed to reinspect the same premises early in the spring in order to ascertain whether the notices given have had a lasting benefit. A method which has been adopted in other places of having a fine imposed for every leaky fixture might have a beneficial effect in making each property owner his own inspector, and the fines thus imposed would help to pay for the cost of the inspection, thus placing the burden of this inspection on the property owners who were not careful in preventing leakage, instead of on the City as a whole. The results of this inspection certainly warrant the continuation of the work in the spring, and an appropriation will be asked for the necessary men to systematically continue the water waste investigation.

It is expected to subdivide the river front and manufacturing districts so that the flow of water into them can be measured and a check made of the amount consumed. In this way it will be possible to detect any large leaks which might be discharging into the sewer and which would not be detected by an Inspector going through the buildings.

DISTRIBUTION SYSTEM.

Present Condition.

The organization of this Department, prior to May, 1905, placed the care of the distribution system under a separate Bureau, so that the Engineering Bureau had no control over the maintenance and repairs to the system. Upon the death of Mr. Henry Hawkes, Superintendent of Repairs to Distribution and Complaints, what had been formerly the Bureau of Repairs to Distribution and Complaints was placed under the Engineer's Bureau, and Mr. Robert Van Buren, Principal Assistant Engineer, was directed to take charge of this branch of the work. The distribution system of a large city requires the highest degree of skillful and efficient management in order to keep it abreast of modern demands, since what would have been deemed adequate provision for fire and domestic purposes a few years ago is entirely inadequate at the present time, as the requirements, especially for fire service, are and have been continually increasing. It is extremely unfortunate that the distribution system was allowed to remain according to the standard of forty years ago, and, in fact, to even fall below such a standard owing to the tuberculation of the old mains, as the money saved by this policy has been lost many times over by our citizens in increased fire rates and fire losses. A great deal of work has been done by the Engineer's Bureau since 1902 in putting in large trunk mains and thus improving generally the distribution of water, but, although the amount spent for this purpose, excluding the extension of distribution, was about $1,550,000, and including extension of distribution about $1,880,000, the latter figure representing about 20 per cent. of the total cost of the distribution system prior to 1902, nevertheless there still remain many miles of water mains which will have to be either cleaned or replaced and many thousand hydrants which will have to be set, in many cases replacing all those that still remain of the antiquated hydrants at present in use.

Work to Be Done.

The work that must be done to bring the system up to the standard properly required by the fire insurance interests of to-day, and so as to give adequate supply for the fire engines, will consist in:

First—Continuing the replacing of all mains laid prior to 1860, with the possible exception of those laid in streets devoted wholly to residential purposes, where the old mains may be cleaned and thus give adequate supply if properly fed at the end of each block by trunk mains.

Second—The cutting out of many of the old hydrants and the setting of many new hydrants, so that the average distance between hydrants shall not exceed 200 feet, this distance being reduced to 150 feet in the more important sections. It will also be necessary to dig up practically every hydrant in the City's service and surround the same with a drain, cleaning the waste opening so that the hydrant will properly free itself from water and thus prevent freezing in the winter time.

Third—The cross connecting of the mains laid subsequent to 1860 and the placing of additional gates so as to reduce the area from which the water is shut off in case of necessity of repairing any main or hydrant.

Fourth—Laying additional trunk mains from the source of supply, so that the frictional loss in the mains can be reduced to such an extent that the equivalent elevation of water at any point served by the Ridgewood system will not be less than 140 feet above mean high tide, thus giving a pressure equivalent to not less than 60 feet of water at any point in the borough.

Fifth—Laying boundary mains for the high service districts, so that the dead ends, which at present cause frequent and just complaint, can be done away with.

The work thus outlined, as can readily be seen, is one of great magnitude and will require the expenditure of a large sum to accomplish it, but with the removal of the constitutional limitation in the case of bonds required for the extension and improvement of the water supply the necessary appropriations can and should be readily granted so as to complete the above work within the next three years. The expenditure will certainly be amply warranted by the returns.

Maps.

A necessary preliminary to carry out the remodeling of the distribution system was the preparation of accurate and detailed maps of the mains already laid. This work has been carried on as rapidly as the other work permitted for the past two years, and an atlas, drawn to a scale of 160 feet to the inch, has been completed, showing all the water mains, gates, hydrants and other appurtenances laid in the City, with the exception of the territory covered by the Twenty-ninth, Thirtieth, Thirty-first and Thirty-second Wards. These maps show the exact location of the hydrants, the size of main, the year in which it was laid, the connections with other mains, the approximate location of gates and the approximate location of the main itself. Surveys are being carried on to accurately locate all gates from the curb line and also to determine, as far as possible, the depth of the main below the surface and its exact distance from the curb. It is proposed to prepare, later on, an atlas to a larger scale, on which all this information will be plotted, and thus obtain an accurate map to a large scale of the distribution system. The importance of such a map for repair purposes, even aside from its value for remodeling and redesigning the system is apparent to the layman as well as to the engineer. In addition to this map, work is being carried on preparing a map showing a complete layout of trunk and small distribution mains for the entire borough. Careful computations are made of the size of mains necessary to carry the water into all parts of the borough and deliver a sufficient quantity for fire and domestic purposes. The layout is based on providing from 15,000 to 20,000 gallons per minute for fire service, after making ample provision for domestic consumption, the amount for fire service being dependent upon the probable character of the buildings to be erected in the various sections of the borough. Upon the completion of this map it will be used as a basis for all water mains to be laid and the development of the system will then progress along comprehensive and thoroughly and carefully studied plans, instead of in the more or less haphazard fashion that has been followed in the past.

Fire Insurance Investigation.

The Engineers representing the Committee of Twenty of the National Board of Fire Underwriters have been carrying on an investigation of the conditions of water supply for fire purposes in this borough and they have been given every facility to obtain all the data and make whatever tests were deemed necessary by them to give an intelligent report on the existing situation. The tests made by them by obtaining the flow from the hydrants in groups of six did not show any conditions differing from those that would be deduced by an examination of the distribution atlas, but will serve to emphasize in the public mind the necessity of the work which has been recommended so strongly by the Engineering Bureau in past years. The extremely low flow obtained from some of the hydrants was simply a physical demonstration of the inadequacy of some of the present mains and hydrants to supply water for anything excepting a very small fire, while, on the other hand, the flow obtained from the new hydrants and new mains showed conclusively that there was no difficulty with the supply furnished by the large trunk mains and that a supply of from 2,000 to 3,000 gallons a minute could be obtained from a hydrant located on the new mains. The test in the dry good district, known as District No. 1 in the Fire Insurance Report made in 1902, was such as to cause a general reduction of practically 20 per cent. on the rates in this district. This reduction in rates would represent about $80,000 annually, while the cost for interest and sinking fund on the work done in the district to improve the supply would represent $2,500 annually, or a saving of $77,500, which would be equivalent to a return on the money invested of 155 per cent. annually. There is no company in existence, if its credit was unlimited, that would not make an investment in equipment that would return to it a percentage like that just given. The Fire Insurance Exchange have so far shown an unwillingness to make reductions in other sections of the City, although the conditions within limited areas have been immeasurably improved. The Department has endeavored to co-operate with the citizens by giving a full statement of the conditions and it is hoped that a reduction will be made commensurate with the improvement already effected.

Pressures.

The pressure maintained in the system during the period of inadequate supply was naturally below that required to give satisfactory service, and the new mains to be laid will be planned on the basis of giving not less than 30 pounds pressure at any point in the borough. To ameliorate conditions as much as possible, extensions were made to the high service and the following areas have been added during the year:

Bounded by Livingston street, Remsen street, Adams street and Boerum place and Henry street.

Bounded by Utica avenue, Rockaway avenue, St. Marks avenue and Atlantic avenue and Eastern parkway.

Bounded by Saratoga avenue, Bushwick avenue, Jamaica avenue and Atlantic avenue.

The pressure from the Mount Prospect Reservoir service has been also improved by opening cross connections from the 48-inch force main at Franklin avenue, Nostrand avenue, Troy avenue and Alabama avenue, these connections being made by utilizing the 12-inch blow-offs which were provided when the line was laid. A 48-inch by 12-inch split sleeve was set just east of Alabama avenue on Atlantic avenue, and a cut-in made in the force main. A 12-inch pipe was laid from this connection up to Alabama avenue and Fulton street, thus providing a feeder for the high section lying mainly east of Rockaway avenue. This connection was completed so that the area bounded approximately by Saratoga avenue, Atlantic avenue, Jamaica avenue and Bushwick avenue was placed on the Mount Prospect service and the pressure in the main raised from a minimum of about 15 pounds to a minimum of about 40 pounds, doing away with complaints of several years standing. It is proposed to make an additional connection to the 48-inch main near Wyona street, on Atlantic avenue, and lay a 12-inch main up Vermont street to feed the Highland boulevard section and thus do away with the New Lots Reservoir and the separate system at New Lots, the high ground being fed by the Mount Prospect Reservoir force main, from which a much more adequate pressure can be obtained. This work should be completed so that the Mount Prospect water can be turned on by the end of January. It will be necessary to extend the Mount Prospect Tower district so as to provide adequate pressure in the section lying north of the Eastern parkway and south of Bergen street, between approximately Nostrand avenue and Underhill avenue. The Tower service will also be extended to cover the high portion of Fourth avenue, and plans have been made to lay a 20-inch main on First avenue to take the place of the existing 20-inch main on Fourth avenue, which will be cut out when placed on the Tower service. The pressure in this section fed by the Ridgewood service has been improved by closing the 36-inch cross connecting main on Albany avenue, thus leaving the 48-inch Fort Hamilton avenue main to supply the outlying south and west sections of the borough.

Since the restoration of pressure through the day, practically no complaint has been received of the lack of water, but the work of laying mains should be continued until the minimum pressure of 30 pounds, advised as a reasonable minimum pressure, is obtained.

Maintenance of Distribution.

Upon taking up the work of the maintenance of distribution, I found that while we had many excellent men at the repair yards, nevertheless the men were so assigned that in case of an accident at night only a small force would be available to respond, and thus a great deal of damage might be done before the necessary gang could be assembled and the repairs commenced. To obviate this, night gangs were formed in each of the repair yards and instructions issued so that if a break was reported under the jurisdiction of one yard, the men at that yard could call on men from one of the other yards to aid in repairing the break, if it were necessary. While this provided for the necessary skilled and unskilled labor, it did not provide men who would have sufficient knowledge or capabilities to quickly grasp the situation and determine on the proper measures to be taken in case there was a break in the system other than that on a small main. I therefore recommended that telephones be placed in the houses of all the Foremen and Assistant Foremen at the repair yards, there previously having been telephones in the residence of only two of the Foremen. I also recommended the placing of telephones in the houses of the Assistant Engineers residing in Brooklyn and arranged so that during all times outside of official hours, including Sundays and holidays, an Assistant Engineer would be within telephone reach to take charge in case of any emergency. This involved on the part of the Engineers the giving up of one night a week and about one Sunday a month, and arranging so that they could be reached by telephone in case of need. No additional compensation was allotted other than having the City telephone in the residence. We were thus able to obtain the services of trained, trustworthy men, without reducing the number and efficiency of the men for other work, and the Engineers of the Department should be given credit for their ready acquiescence to this system, which involved a curtailment of the time which could be devoted to other than official work without any additional recompense.

An examination of the pipe yards and the area covered by the gangs from the different yards shows that the yard located at Coney Island was about as inaccessible and as unfavorably located as it well could be. Also that the area covered by the North Portland avenue, or Western District yard, is too great, the distance from the yard to the furthest point being about five miles. It is therefore proposed to abandon the Coney Island repair yard and relocate it along the line of the Manhattan Beach Division of the Long Island Railroad, and establish a pipe yard in connection with this repair yard so that the pipe used for the extension of distribution, which is bought by the Department and laid by the contractors, will be much more central to the territory in which it is to be laid than is at present the case with the Gowanus pipe yard. It is also proposed to locate a yard in the vicinity of Greenwood Cemetery and reduce the area covered by the North Portland avenue yard, giving to the yard previously mentioned the territory covered by Bay Ridge, Fort Hamilton, and also the Eighth, Twelfth and Twenty-second Wards.

The large amount of repair work necessary to be done, and the lack of a sufficient number of common laborers, made it necessary to postpone the placing of separate gangs on the work of caring for and making minor repairs to the gates and hydrants. It is proposed to form these gangs in the spring and to keep a record of the operation and repair of all gates and hydrants in the system. It is also proposed to form a special gang for handling large mains, this gang being kept on the other work when there is not sufficient repair work on the large mains to keep it employed. In connection with this gang, and also for the general work of the Department, a new truck has been ordered suitable for handling the largest pipe used in the system, and this truck can be called upon at any time to haul either large or small pipe, instead of depending on outside contractors, as has previously been the case. The equipment of the repair yards was found to be deficient in other ways and requisitions have been issued for the necessary trucks, machines, lights, etc., required.

With the approach of the winter there came the question of the care of the fire hydrants during freezing weather, it being well known that the hydrants in many cases would not drain properly and would become frozen unless pumped out and frequently inspected. Five portable boilers were purchased to enable the department to thaw out its own hydrants instead of calling on the Fire Department, as had previously been the custom, and we could thus thaw out a hydrant using a boiler worth $175 instead of dragging to the hydrant an expensive fire engine worth probably $5,000 to $6,000, and depriving the City of the use of this engine for fire purposes during the time it was employed in thawing out the hydrants. To look after the hydrants it was evident that a regular inspection would be required, and the Fire Department, through Mr. Thomas Lally, Deputy Chief in charge, gave us valuable aid by promptly

reporting the result of the monthly inspection by the firemen to this department. As soon as this report was received it was turned over to the foremen of the various yards and the work of repairs immediately commenced. In addition the Inspectors on the waste survey, who, as previously reported, were obtained from the Water Registrar, were placed on the work of inspecting the hydrants, each man being allotted a territory requiring the inspection of approximately 200 hydrants. The inspection consists of removing the nozzle cap, dropping a plumb line in the hydrant to see whether there is water in it, pumping it out if water is found, and if any defects are noticed reporting the same to the Repair Yard. In addition to the water waste Inspectors all the Inspectors that could be obtained as construction work was stopped were put on the inspection work, but we have been unable to provide sufficient Inspectors to cover more than about 5,000 hydrants, which represents about 54 per cent. of the total number in use. Recommendation was made for the appointment of the additional Inspectors, and it is to be hoped that the appointments will be made. Although the mildness of the winter up to date has rendered this work relatively less important than in previous winters, the results obtained from the inspection have been of importance in regard to increasing the efficiency of the system, and have also furnished valuable data to show the necessity of prompt and efficient work in remedying the conditions which necessitate the pumping out and frequent repair of many of our hydrants.

Prior to this year practically no attention was paid by the repair gangs to the fire alarms, although a signal had been placed in the Western District Repair Yard. The experience of the Fire Department where fires were located near the boundary of a high service district showed clearly that in case of a large fire invaluable service might be rendered if the Water Department had men on the ground who could open gates between the two systems and furnish an additional supply for the use of the engines. I therefore recommended to Chief Lally the establishment of a fire signal in the East New York Repair Yard and ordered that a horse and wagon be always ready to respond to second alarm fires which were within a distance of 1,500 feet of the boundary of the high service districts. Details have been made of men at both yards to always be ready to respond to such alarms at any time of the day or night, and efficient work has been done by these men at fires which have occurred along the boundary of the high service districts since the system was installed. I think that better results could be obtained by locating the headquarters for such service at a point more central than the two Repair Yards, and the plan of providing the necessary room for this special gang at the Mt. Prospect Pumping Station is under consideration.

Subsurface Structures.

In many cases in the past private companies have been allowed to lay ducts, pipes and other subsurface structures in close proximity to water mains, and in some cases directly over and surrounding the mains, so that in case of a leak it would be impossible to properly repair the same without breaking out these private subsurface structures. The atention of the corporation Inspectors has been called to the necessity of allowing ample room in all directions from the existing water mains, and thus do away with the difficulties which have been found in the past. In order to prevent the laying of structures in locations where they would interfere with future public utilities, such as sewers and water mains, a comprehensive large scale map of all subsurface and surface structures on our streets should be prepared. The preparation of such a map, which has been recommended and discussed before, would be a work of great magnitude and large expense, but its utility would more than recompense for the time and labor spent on making the map. This work, to be properly done, should be assigned to an Engineer who would devote his entire time to the work and have a properly organized corps of assistants under his direction to obtain, compile and record the data. As the value of the map would lie in its accuracy every care would have to be taken to prevent errors, and all parties, both private and public, making excavations and laying structures beneath the surface of the City streets should be compelled to report the exact location of such structures to the Department, and, furthermore, obtain the department's approval to the location of these structures prior to commencing work. Furthermore, the utmost care should be exercised to prevent any departure from the plans thus approved in the construction of their works by corporations or private parties.

Extension of Distribution.

Owing to the legal and other difficulties experienced during 1904 in letting the contract for the extension of distribution, at the commencement of this year there were many streets on which houses had been built and through which no water mains had been laid, thus entailing serious loss to the owners of the property and a great deal of criticism of the Department. The preparation of a contract covering the laying of mains in streets in the outlying districts, when ordered by the Engineer, has proven a satisfactory method of dealing with the situation, and an enormous amount of work has been done in laying the mains in the outlying districts, with the result that at present there are practically no streets in the City for which petitions have been made and reported on favorably and where buildings have been commenced that have not already water mains laid therein. The number of streets for which petitions were received to lay water mains was 130, while the streets reported on favorably amounted to 82. The work of extending the distribution was carried on under a contract made with Daniel Douglass, dated January 9, 1905, with Murphy Brothers, afterwards assigned to Isaac Harris, dated February 24, 1905; with Isaac Harris, dated August 4, 1905; with Isaac Harris, dated September 25, 1905, and by our own men, a large amount of work being done by the men at the repair yards, together with a special gang, under Assistant Foreman McCarthy, who were kept continuously on the work of laying mains for some time. The result of the work of extending the distribution is given in the following tables.

Removal of Old Mains.

The work being done by Mr. M. J. Dady, under his contract with the City, dated January 22, 1904, in removing and replacing some of the old tuberculated mains, was carried on actively and the last main was laid by him in July.

Twenty-one hydrants were placed on the 24-inch main that had been laid on Livingston street by Mr. Isaac Harris for Cranford & McNamee, the contractors for the Rapid Transit Commission subway on Fulton street, to take the place of the 30-inch main on Fulton and Joralemon streets. The latter main was cut out of service on March 2, and the new main, having larger carrying capacity, is of much greater value, as it is cross connected at all intersecting streets.

A contract was made with T. O'Connor Sloane for the removal and relaying of mains in the section bounded by North Tenth street, Wythe avenue, Myrtle avenue and the river, but no work has been done under this contract other than the casting of some of the pipe necessary to carry out the contract.

It is unfortunate that the work of removing mains had to be cut down on account of the lack of appropriation, as the importance of this work has been so forcibly shown, both in previous reports and in actual results obtained by the removal and replacing of the mains. The work done in this connection during the year is shown in the following table.

Summary of Work Done.

The general work done by the repair yards in looking after the distribution system was as follows:

Size of Mains.	Linear Feet Laid.	No. of Gates Set.	No. of Gates Removed.	No. of Hydrants Set.	No. of Hydrants Removed.
30-inch	....	1	1	....	....
20-inch	....	2	2	....	....
16-inch	....	2	....	....	....
12-inch	347	10	5	....	....
8-inch	2,291	32	16	....	....
6-inch	1,723	51	32	....	....
4-inch	....	11	8	....	....
Total	4,361	109	64	356	292

The work done in laying mains, with the exception of the high pressure fire service mains, is shown in the following tables:

Contract for Removing and Relaying Mains; M. J. Dady, Contractor; Dated January 22, 1904.

Size of Main.	Linear Feet Laid.	Linear Feet Removed.	No. of Gates Set.	No. of Gates Removed.	No. of Hydrants Set.	No. of Hydrants Removed.
24-inch	488	....	1	....	....	....
20-inch	16,300	....	23	....	....	....
16-inch	26	....	....	....	....	....
12-inch	291	....	8	....	....	....
8-inch	2,354	10,102	71	15	....	....
6-inch	1,386	8,608	57	95	....	....
Total	20,845	18,710	160	110	108	29

Contract for Hauling and Laying Water Mains; Daniel Douglass, Contractor; Dated January 9, 1905.

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
20-inch	1,838	3	....
16-inch	1,054	3	....
12-inch	28,188	50	....
8-inch	35,848	76	....
6-inch	27,331	94	....
Total	94,259	226	339

Contract for Hauling and Laying Water Mains; Murphy Brothers, Contractors; Isaac Harris, Assignee; Dated February 24, 1904.

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
20-inch	778	1	....
12-inch	10,596	25	....
8-inch	20,686	56	....
6-inch	1,711	40	....
Total	33,771	122	114

Contract for Hauling and Laying Water Mains; Isaac Harris, Contractor; Dated September 25, 1905.

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
20-inch	27	....	....
16-inch	1,536	2	....
12-inch	3,960	10	....
8-inch	25,920	66	....
6-inch	1,451	23	....
Total	32,894	101	111

Contract for Laying Mains in Hicks, Joralemon, Furman and Willoughby Streets; J. J. Cashman, Contractor; Dated June 12, 1905.

Size of Main.	Linear Feet Laid.	Gates Set.
30-inch	1,080	4
24-inch	87	4
20-inch	304	2
6-inch	30	4
Total	1,501	14

Contract for Laying 20-inch Water Main on Twenty-fourth Avenue, Cropsey Avenue, etc.; Isaac Harris, Contractor; Dated January 24, 1905.

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
20-inch	8,650	8	....
16-inch	1,315	5	....
12-inch	86	4	....
8-inch	118	7	....
6-inch	210	21	....
Total	10,379	45	19

Contract for Laying 16-inch Trunk Water Main; G. W. Pereira, Contractor; Isaac Harris, Assignee; Dated December 12, 1903.

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
16-inch	2,647	2	....
6-inch	272	17	....
Total	2,919	19	18

Contract for Laying Mains in Metropolitan, Morgan, Maspeth Avenues, etc.; Isaac Harris, Contractor; Dated August 4, 1905.

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
20-inch	7,400	12	....
16-inch	1,180	4	....
12-inch	80	2	....
8-inch	1,495	17	....
6-inch	350	64	....
Total	10,505	99	63

Table 13, attached hereto, shows the total number of mains laid this year, together with the mains laid previously, and the total miles of mains laid is 5.4 per cent of the mains laid previous to January 1, 1905.

Tables 15, 16, 17, 18, 19, 20, 21, 22 and 23 give the streets and limits in which mains were laid. These tables give the streets in which mains have been laid since 1897, as, unfortunately, during these years the tables of such mains have not been reproduced in the annual reports, but should form a valuable part of the record.

HIGH PRESSURE FIRE SERVICE.

Coney Island System.

The work of laying the mains for the high pressure fire service system was continued actively by the Borough Construction Company, the contractors for this work, as soon as the weather permitted, and the work was entirely completed by August 1, 1905. Considerable difficulty was experienced in getting satisfactory results in testing this line, as the main was laid in a sandy soil, frequently below the water level, and the sand getting into the main and cutting the disks of the valves made it very difficult to obtain perfectly tight valves when the test was applied. There was also a similar trouble with the hydrants. The mains, however, were finally tested and the system accepted. The total work done was as follows:

Linear feet of 16-inch pipe laid	5,162.6
Linear feet of 12-inch pipe laid	2,901.5
Linear feet of 8-inch pipe laid (for hydrant connections)	359.4
Three-nozzle hydrants set	19
Four-nozzle hyrants set	28
16-inch gates set	5
12-inch gates set	6
8-inch gates set	50
Linear feet of 24-inch suction pipe laid	160.2

Of this work, all but 1,333.8 feet of 16-inch pipe and 108 feet of 24-inch pipe were laid during this year. The mains and hydrants have worked satisfactorily since their completion and no trouble is anticipated from them.

Mr. Christopher Nally, the contractor for the engine house, carried on the work slowly, and considerable difficulty was experienced in getting him to entirely complete his work, which was not finished until October 2, 1905. As the fire insurance interests raised some question as to the security of the building in case of a fire in the adjoining sewage disposal plant, the window frames on the south and east side of the building were replaced by hollow metal frames fitted with wire glass, and metal shutters were hung inside of these windows. The main entrance door was covered with metal and metal lockers were furnished, so that there is practically no wood in the building, with the exception of the boards on whic hthe roof covering placed.

The gas engines and pumps being furnished under the contract with B. Franklin Hart, Jr., & Co., were installed, so that the contract was practically completed by September 30, 1905. The engines are the Nash gas engines, connected to Gould's triplex pressure pumps. The engines were tested in April for brake horse power, gas consumption and regulation, and the results obtained are shown in table No. 31.

Owing to difficulties with the sand entering from the creek, it was necessary to postpone the contract test for the engine and pumps and to extend the intake. This was done by constructing a heavy wooden box, held securely in place by piles and connected with the old work. This extension to the intake was completed on November 25 and there has been no further trouble with sand, although the entire supply for the three pumps has at various times been drawn simultaneously from the creek. After completing the extension to the intake, arrangement was made for testing the engines and pumps for capacity and endurance for 24 hours. This test was commenced on December 28, 1905, but, on account of minor difficulties, two of the engines did not comply with the test and have to be retested. The results obtained are shown in table No. 32.

The plant has been in operation ready for actual use since the beginning of September and the engineers have been carefully trained so as to respond instantly in case of an alarm. The engineers at the Gravesend Station have also been trained to run the plant, so that they can be called upon in case of an emergency. The crew used at the station consists of one Engineman and one Oiler, the Laborers who were originally assigned to this station proving unsuited for the work. Each engine is run for a few minutes each day to see that everything is in thorough working order. On two occasions, when fires within the protected district have made it necessary to call on the station, the force and volume has been more than ample even though running only one engine.

A telephone system has been installed, under a yearly contract, with the New York and New Jersey Telephone Company and electric feeders have been run to supply the necessary current for the motor generators and for lighting the building. The gas for the engines is obtained from a nearby gas tank, a gas meter having been installed and the connecting main laid in June.

In the tests made with the co-operation of the Fire Department, it was shown that the full capacity of the entire plant, i. e., 4,500 gallons per minute, could be delivered at the furthermost hydrants at a pressure of about 135 pounds, the design of the system being such that it was expected to deliver this water at a pressure of about 125 pounds. The photograph shown on page 152 gives a fair view of some of the streams obtained during the test, and the photographs on pages 153 and 154 show the exterior of the pumping station and the interior, giving a good view of one of the engines and pumps.

The system as installed at Coney Island has been entirely successful and it will probably be advisable to extend this system so as to cover a larger portion of the Island. By extending the system over the entire Island a reduction in the cost of maintenance can be made by doing away with the steamers and crews necessary to run them, but the results to be obtained from the expenditure of the necessary money would not be equal to those that could be obtained from the expenditure of a similar amount in other sections of the borough where values to be protected are many times those at Coney Island. It will, therefore, probably not be advisable to extend the system to cover the entire Island for some time to come.

Main Station.

As the design of a system calling for every part to be safe at a working pressure of 300 pounds per square inch necessitated a careful consideration of all details, ample time was given to the preparation of the contract and specifications for the fire hydrants. After the original bids had been rejected, the contract was readvertised and bids received on February 1, at which time five sample hydrants were submitted by the following bidders:

Kennedy Valve Manufacturing Company.
A .P. Smith Manufacturing Company.
Camden Iron Works.
Ludlow Valve Manufacturing Company.
John Fox & Co.

The hydrants were submitted to four tests, as follows:

First—A pressure of 600 pounds applied below the main valve, the valve being allowed to leak one-quarter ounce per minute under this test.

Second—The independent nozzle valves were closed and submitted to a pressure of 300 pounds per square inch, the leakage allowed being one-half ounce per minute.

Third—Without changing the other conditions of the test, the pressure was raised to 600 pounds per square inch, and under this test a leakage at the independent valves was allowed, but none other.

Fourth—A pressure of 300 pounds per square inch was applied at the base of the hydrant with the main valve closed and no leakage was allowed under this test.

All the hydrants stood all the tests, with the exception of the Ludlow hydrant, which, on the third test, leaked through the drip valve. After completing the test at the Ridgewood Engine House, arrangements were made with the Fire Department to furnish the necessary water at high pressure to make as near as possible a practical working test of the hydrants, and eighteen tests were made of the hydrant with the fireboat, the Fire Department furnishing the fireboat "David A. Boody," at the dock at the foot of North Eighth street. These tests covered the operation of the hydrant under various conditions and included the removal and replacing of the parts of the hydrants and retesting the same. It was found under these tests that the hydrants submitted by the Kennedy Valve Manufacturing Company, by the Camden Iron Works and by John Fox & Co., could not be opened by the City's Inspector with a presssure at the base of the hydrant maintained at 175 pounds per square inch, and the further test of these hydrants was therefore discontinued. The hydrants of the Ludlow Valve Manufacturing Company did not comply with the specifications, inasmuch as the main valve did not tend to close with the pressure, and also in one or two minor points. The hydrant of the A. P. Smith Manufacturing Company successfully passed all tests and was then retested on April 5 at the Ridgewood Engine House. These tests were the same as those to which the hydrant was subjected originally at the same place. and an examination was made to see whether the hydrant complied in its construction with the specifications. Upon completing the tests of the hydrant, recommendation was made to award the contract to the A. P. Smith Manufacturing Company, as their hydrant was the only one which complied with the specifications. Before the contract was awarded to them, a taxpayer's suit was brought by the Kennedy Valve Manufacturing Company to prohibit the award of the contract and Judge Kelly, after a hearing at which the A. P. Smith Manufacturing Company was not represented, granted an injunction. The case was afterwards tried before Judge Marean, the A. P. Smith Manufacturing Company being then represented by counsel, and the injunction previously granted was vacated. The contract was signed by the A. P. Smith Manufacturing Company on June 27, 1905, but as the Fire Department desired to have 3-inch outlets in place of the 2½-inch outlets called for, a supplementary agreement was made with the contractors for furnishing the hydrants with the 3-inch outlets, and the work was therefore somewhat delayed. The contractors also had difficulty in obtaining the necessary castings, and up to date no hydrants have been furnished.

The original bids received for laying the mains and appurtenances were rejected on account of a misunderstanding, and new bids were called for and submitted on January 6, 1905. The contract was awarded to John J. Cashman, the lowest bidder, and work was immediately started on obtaining the pipe and special castings. Difficulty was experienced in getting proper steel castings, practically all the castings made during the first two months being rejected on account of various defects. The National Steel Foundry of New Haven, Conn., who were making these castings, finally overcame the difficulties, which were mainly due to poor workmanship in making the moulds, and the castings were sent to the Pacific Iron Works of Bridgeport, Conn., to be machined and tested. In testing the castings, further difficulty was experienced and there was considerable delay before an apparatus was finally rigged up which would withstand the 700 pounds called for under the specifications. The castings themselves stood without difficulty this test and they probably form the strongest point in the line of the high pressure fire service. On account of the difficulty in getting the steel castings, the work of laying the mains progressed slowly, and the contractor was also delayed on account of not receiving the hydrants, which were to be furnished by the City. In the latter part of the summer and fall better progress was made and up to date the following work has been done in laying these mains and their appurtenances:

Size of Main	Linear Feet Laid.	Number of Gates Set.
20-inch	5,515	23
16-inch	7,098	23
12-inch	13,134	40
8-inch	380	157
Total	26,127	233

The contract called for a test in the trench of 450 pounds per square inch, with a prescribed leakage not to exceed 4 gallons per linear foot of joint per 24 hours. As the testing of cast-iron mains under this pressure with a prescribed leakage was an innovation, the contractor had some misgivings as to the result of the tests. The results obtained, however, as shown below, bear testimony both to the efficiency of the contractor's work as well as the correctness and efficiency of the design of the joints. There has been no trouble with the lead joints and only a small amount of trouble with the flange joints, this being due, to a great extent, to the men employed in bolting up the flanged joints. The contractor is continuing the manufacture of the special castings and straight pipe required to complete the work in the spring and all the mains called for should be laid and the work completed early in the summer.

A contract was also made with Mr. Cashman for laying the fresh water supply mains for the main and reserve stations. The work of laying the pipe under this contract was commenced on September 25 and has now been completed, with the exception of about 60 feet in Joralemon street near the corner of Hicks street, where the shores supporting a building interfered with and prevented the laying of the pipe. The work done under the contract was as follows:

Size.	Pipe Laid, Linear Feet.	Gates Set.
30-inch	1,080	4
24-inch	87	4
20-inch	304	2
6-inch	30	2
Total	1,501	12

Studies have been made of the salt water suction mains to be laid from the river to the pumping station, but no work has been commenced on these as the consent of the New York Dock Company had to be obtained before the intake mains could be laid. It is expected that this consent may be obtained early in the year and a contract then drawn for the laying of the mains.

The maps of the lands required for the pumping stations at Joralemon and Furman streets and at St. Edwards and Willoughby streets, were forwarded on June 22, 1904, and on July 15, 1904, were approved by the Board of Estimate and Apportionment. Condemnation proceedings were commenced by the Corporation Counsel and on March 30, 1905, the Commissioners were appointed. We have as yet received no notice of the awards made. The buildings have been torn down and the site cleared ready for the stations to be commenced.

A contract was entered into with Bernstein & Bernstein of No. 24 East Twenty-third street, Manhattan, to draw the necessary plans and specifications for the buildings both at Furman and at Willoughby streets. The supervision of these plans involved an extraordinary amount of laborious and unexpected work, and numerous and considerable difficulties with the architects. Two of the preliminary sketches submitted by them had to be rejected or considerably modified, as a mere inspection sufficed to show that the cost of the proposed buildings would largely exceed the appropriation made and available for it. And yet, in spite of those rejections, modifications and repeated warnings to the architects not to exceed the cost, the bids received on August 9 on the plans and specifications finally prepared by them were altogether about $30,000 over the amount allotted, and the bids, therefore, were rejected by the Commissioner and new plans and specifications will have to be prepared by the architects. This is all the more to be regretted, not only on account of the delay, but because the rapidly increasing rise in the price of materials since the contract for the plans for these buildings was made with the architects, will result in an increased cost, even if the plans and specifications are now prepared by the architects as required under their contract.

The bids for the motors and pumps were received on July 19 and recommendation was made that the contract be awarded to the D'Olier Engineering Company, who were the lowest bidders. After having the matter under consideration for several months, Commissioner Oakley decided to award the contract to the D'Olier Engineering Company, but an injunction was obtained preventing the awarding of the contract and it has not yet been argued. The injunction was based on the claim made that the D'Olier Engineering Company were infringing on patent rights.

A form of contract was drawn covering the furnishing of power by the Edison Electric Company, and although forwarded last summer, has not yet been finally acted upon.

There are only a few minor contracts to be let so as to cover the entire installation of the high pressure system, and the letting of these contracts will not delay the completion of the work, as it will only take a short time to carry them out.

Driven Wells.

The work of maintaining our driven well systems and extending the same is an important part of the maintenance of the water supply of Brooklyn, and this work has been placed under the charge of Assistant Engineer William F. Laase. Mention has already been made of the result of the work of one of the driven well gangs at the Spring creek station, and from our experience with outside contractors in putting down wells, it is safe to assert that our driven well gangs can sink wells as cheaply and as rapidly as outside contractors. After much study and experiment, we have adopted the tile form of well, previously used by the Jamaica Water Works Company and others, having a slotted tile strainer anywheres from 20 feet to 40 feet in length, surrounded by gravel, this being placed by first sinking a large casing, then placing the tile within the casing, surrounding it with gravel and pulling the casing as the gravel is placed. The result obtained from these wells has been excellent and this type of well will be used for remodeling the Gravesend, New Lots, Spring creek and Jameco stations, as well as for the new station at Canarsie. This type of well is not subject to corrosion or electrolysis, which affect the pipe wells and are a source of expense; while on the score of durability they are far superior to those hitherto in use. They compare, in fact, in that respect, with our infiltration galleries, in which the same material is used. We may, therefore, in some cases at least, find it advantageous to substitute them for infiltration galleries, particularly in connection with the proposed consolidation of pumping stations on the line, which are now and have been for some time under study, and which we propose to make by small units (supplied by a number of wells) and to operate either by electricity, compressed air or hydraulic power. A line of these wells, conveniently grouped, would yield practically the same results as the infiltration gallery, would be equally permanent, and would be more quickly and cheaply built.

Studies are being made and experiments will be carried on as to the best form of well to be adopted for developing the deep underground supply beneath the blue clay bed, and it is probable that either a solid brass strainer or a vitrified tile strainer will be used for this purpose, in each case surrounded by gravel. By abandoning the old system of short iron and brass strainers with iron pipe we should be able to do away with a very large percentage of our cost of maintenance and repairs to driven wells and devote the time of the driven well gangs to sinking shallow and deep wells.

The work done by the driven well gangs has been as follows:

New Lots Station.

General work, including digging out and filling ditch over the 6-inch main.

Spring Creek Station.

Eight 4-inch points with 6-inch casing vitrified pipe wells were sunk to depths varying from 59 feet 1 inch to 62 feet 2 inches. Six wells having 4½-inch asphalted wrought-iron suction pipe and two having a 4-inch wrought-iron suction pipe, the suction varying from 27 feet 10 inches to 32 feet in length, were sunk, and the wells yielded from 300 to 700 gallons per minute when pumped separately. The slotted pipe was 30 feet in length. Five wells were sunk having 4½-inch brass, perforated, single gauze strainers, each strainer consisting of four lengths of 6 feet. These wells were surrounded by gravel and four of them sunk to a depth of 61 feet 10 inches to 63 feet, one of the wells being sunk to a depth of 54 feet 3 inches, and had 4-inch wrought-iron suction pipe, the upper part of the well consisting of 6-inch wrought-iron casing. The yield of each well, when pumped separately, varied from 500 to 600 gallons per minute. Five wells were sunk having two 6-inch single gauze, brass slotted strainers 12 feet long, and were put down to depths from 64 feet 7 inches to 65 feet 5 inches, the upper part of the well being made up of 6-inch asphalted wrought-iron pipe. There was no drop suction used in these wells and the strainers were surrounded with a cylinder of gravel 12 inches in diameter, the same as was done in the case of the other wells. The wells yielded from 600 to 700 gallons per minute when pumped separately. Five wells having 10-foot 5-inch single gauze, brass-slotted strainers were sunk to depths of from 34 feet to 50 feet, and had 4½-inch asphalted wrought-iron suction pipe. The usual gravel was placed around these strainers.

All of these wells have been connected with the main suction line and the 2-inch wells at this plant have been practically abandoned, as no water was being obtained from them. As previously stated, the increase in yield by sinking these wells amounted to about 5,000,000 gallons daily.

Oconee Station.

A 12-ich casing was used at this station for sinking shallow wells, surrounded by gravel, and three of the wells had strainers consisting of two lengths of 6-inch perforated, galvanized iron, single gauze, brass-slotted strainers 12 feet long, the depth varying from 45 feet to 60 feet 7 inches. These wells yielded 400 gallons per minute when pumped separately.

Five wells were put down having 4-inch single gauze, brass-slotted strainers 10 feet long, the depth of the wells varying from 43 feet 9 inches to 57 feet, the wells having 4½-inch asphalted wrought-iron casings. These wells, when tested separately, yielded from 200 to 250 gallons per minute.

The wells were connected to the main and increased the supply of the station by about 700,000 gallons.

Eight of the 8-inch deep wells were disconnected, washed out, pumped and reconnected, these wells yielding from 250 to 400 gallons per minute.

Jameco Station.

An effort was made at this station to improve the deep wells, the yield from this plant being only a fraction of what was originally obtained. Inside of well No. 11b two 12-foot lengths of 6-inch galvanized iron, perforated pipe were placed, covered by slotted gauze, brass strainers and connected to the 6-inch asphalted wrought-iron suction pipe. After the strainer was put in place the casing of the well was pulled up, but when this well was pumped the yield was only 200 gallons per minute. The same result was obtained by similarly treating well No. 10b, while well No. 96, when pumped out and washed, yielded 375 gallons per minute. An attempt was made to put down a new well, but the pipe broke at a depth of 70 feet and the well was abandoned. The men also cut the necessary pipe to connect up the four vitrified wells being put in at this station under contract with C. A. Lockwood.

Emergency Station at Culvert L.

At this station our men sunk 20 wells, two gangs being employed on the work. The work was commenced on November 13 and completed on December 22, and the cost of the wells, including labor and material, amounted to about $4 per linear foot. These wells were also sunk by using a 12-inch casing, placing the points and surrounding the points with gravel and then pulling the casing. Ten of the wells have a strainer consisting of two 12-foot lengths of perforated, galvanized iron pipe, covered with slotted brass strainers and put down to depths varying from 44 feet to 55 feet, the casing of the pipe consisting of 6-inch asphalted wrought-iron pipe, there being no drop suction. The other ten wells have a cluster strainer consisting of fifteen 2-inch strainers 5 feet long, coupled together in three sets of five each, making a total length of strainer of 25 feet, with a 6-inch asphalted wrought-iron pipe forming the casing between the strainers and the surface of the ground. These wells were put in to depths varying from 48 feet to 53 feet, and the indications are that the wells will yield from between 3,000,000 to 4,000,000 gallons per day.

Twelve 2-inch test wells were sunk in the vicinity of this station and records are being regularly taken of the fluctuations of the water level in these wells.

Forest Stream Station.

Fifty-two of the 2-inch wells were pulled up and redriven with new points and asphalted wrought-iron pipe to depths varying from 26 feet 4 inches to 31 feet 8 inches, and yielded from 42 to 72 gallons per minute. Thirty-three of the wells have been pulled up, cleaned and redriven with the old pipes and strainers to a depth of from 25 feet 4 inches to 31 feet 6 inches, and yielded from 30 to 40 gallons per minute. Seven of the wells have been pulled up and resunk, using the old pipe and new strainers, the depth being from 25 feet 4 inches to 31 feet 6 inches, and the yield from 35 to 52 gallons per minute. Seventeen of the wells have been brushed and cleaned and yielded from 30 to 52 gallons per minute. At this station, wells surrounded by a 12-inch cylinder of gravel are also being placed to increase the yield of the station to its maximum.

Clear Stream Station.

Thirty-nine of the 2-inch wells have been brushed and cleaned, and, when pumped, yielded from 24 to 40 gallons per minute. Forty-five of these wells have been pulled up and redriven with new 2-inch galvanized iron perforated pipe, covered by slotted brass gauze, the strainers being 5 feet long and the casing being new 2-inch asphalted wrought-iron pipe. These wells yielded 33 to 48 gallons per minute and were driven to depths of from 32 feet 6 inches to 33 feet. Fourteen of the 2-inch wells were partially pulled up and redriven, the depth being from 25 feet to 37 feet and the yield from 18 to 24 gallons per minute. Fifteen of the wells were pulled up and replaced with new points and asphalted pipe and redriven to a depth of 33 feet, yielding from 30 to 40 gallons per minute. Eight of the wells were pulled up and redriven, using the old casing but having new 2-inch single gauze strainers, the depth varying from 33 feet to 35 feet 6 inches and the yield, when pumped individually, being from 30 to 52 gallons per minute.

The gravel wells are now being placed at this station, as the yield of the station has dropped off, due to the reclogging of the smaller wells. As it is expected to abandon the station in the near future, only sufficient wells to bring the station up to its maximum safe yield will be put in.

Agawam Station.

The wells were pumped individually and yielded from 100 to 250 gallons per minute. The water getting into the valves leading to the wells froze early in the year and cracked the bottom of the valves, twenty-one of them having to be replaced with new bottoms.

Canarsie Station.

To determine the stratification at the Canarsie Station, two 6-inch open-ended wells were put down, the one at Ninety-second street going to a depth of 199 feet 7 inches and the one at Eighty-fourth street being carried down 72 feet 10 inches. These wells have first class material for a shallow well, but did not give any indication of a deep well supply. It is expected to put a 4-inch well inside of the 6-inch well at Ninety-second street and continue it to a greater depth, so as to prove conclusively whether there is or is not any deep well supply at this point. In sinking these wells, the Fire Department kindly loaned us one of their engines, which was used for washing out the sand.

Test Wells at Massapequa.

Seventeen 2-inch wells were put down at various points surrounding Massapequa to allow observance being taken of the underground water level.

Test Wells at Wantagh.

Fifteen 2-inch wells were put at Wantagh for the same purpose as shown at Massapequa.

Miscellaneous Test Wells.

Three 2-inch test wells were put down at South and Oliver streets and at Ganse-voort Market, so as to give the stratification at these points for the high pressure fire service station for Manhattan.

At the Flushing Pumping Station two 2-inch test wells were sunk to a depth of from 68 feet to 70 feet.

In addition to this work, test wells were sunk at some of the stations for the supply of water for the Engineer's and Firemen's residences, as well as three wells which were put down at the Hempstead Storage Reservoir house.

PUMPING STATIONS.

Mount Prospect.

The amount of water pumped into the reservoir system at this station has been very slight, as the Davidson engines at Ridgewood have been kept under constant service pumping directly into the Mount Prospect Reservoir, and for the greater part of the year no water at all was pumped by the reservoir engines. On the Tower service the pumping was increased by about 12 per cent., and this will be further increased by putting on to the service additional area which at present is supplied from the Mount Prospect Reservoir. The shutting down of the reservoir engines has given us a good opportunity to thoroughly overhaul them and No. 1 engine has now been completely overhauled and can be run on either the Tower or Reservoir service. The cost of overhauling the engine was $958. No. 2 engine has been overhauled at a cost of $396 and is now in good repair. The steam turbine driven centrifugal pump installed by the D'Olier Engineering Company was first placed in service on March 9, and the official test was made by Mr. R. P. Bolton on April 21 and 22, the engine complying with the specifications, the more important results of the test being as follows:

Delivery, at the rate of 6,546,899 gallons in twenty-four hours.

Net head pumped against, 173,469 feet.

Pump end speed, 907⅓ revolutions per minute.

Duty, 82,156,433 foot-pounds per 1,000,000 B. T. U. The engine has been run in the regular service with very satisfactory results, the only difficulty being the noise made by the gears. So far the makers have been unable to overcome this difficulty, but they are experimenting with new gears and if they prove satisfactory will install

them at their own expense. The completion of this engine made it possible to overhaul the other Tower engines, which had been kept practically in constant operation. Engines Nos. 3 and 4 have been overhauled at a cost of $552.32, while engine No. 5 was also repaired at a cost of $238.80.

The 8-inch steam main used at this station was in poor condition and was too large for the service. It was therefore replaced by a new 5-inch main, put in by Wm. Horne & Co., under requisition, and the main was satisfactorily tested and is now is use.

The fire room and coal shed have been rewired and the necessary lights placed around engine No. 5. The wiring at this station is now in first-class condition. As the City's wires leading from the station to the Mount Prospect Reservoir and tower prevent the removal of the poles, it is probable that the lighting of the reservoir can be done more economically and satisfactorily by the Edison Company than by continuing the present system.

Gravesend.

The average amount of water pumped per day was practically the same as during last year, being slightly under 3,000,000 gallons. An additional boiler was placed at this station to help out in case it was required, as it was expected to increase the pumping from the station by the installation of additional wells. These wells are now being put in by Mr. F. W. Miller, under an agreement to pay $9 per foot for the well complete. The wells consist of 20 feet of wrought iron pipe surrounded with slotted brass gauze, these strainers being placed within a 12-inch casing and gravel placed around them as the casing was withdrawn. It is expected to have six of these wells, and their depth from the centre of the suction line will be about 55 feet. A 12-inch suction is being laid by Frank J. Gallagher under a requisition, and it is expected to pump the supply by utilizing the Worthington engine, which has not recently been used on the present wells. The building for the new station is being erected by Messrs. Ryan & McFerran, and good progress has been made. The contract for the pumps was made with the Snow Steam Pump Works, the contract for the boilers being awarded to the United Heating Company, and the contract for the steamfitting to William Horne & Co. Very little work has been done under these contracts, and the contractors for the pumps have been repeatedly urged to hurry their work. The castings necessary for the new driven wells are to be furnished under a contract for which bids were received on December 27. The wells themselves are to be put in by the Department's men, the vitrified tile well being the one adopted.

New Lots.

This plant has been kept running at its maximum safe capacity, but is in a worn-out condition and exceedingly uneconomical. To increase the economy of operation, tests were made in the spring on boilers Nos. 1 and 2, and fitted with the Coe system of shaking grates and blowers, which would enable us to burn No. 2 Buckwheat coal. The test showed a large saving by using the small coal, and it is expected, under the recent coal contract, to have coal furnished at this station and to burn it in three boilers, the Coe system being installed in a third boiler. The wells are more or less clogged, and the pump draws in a large percentage of air, the actual amount of water delivered by the station being about 20 per cent. less than the theoretical amount shown by the pumps. To reduce this slippage as much as possible, five deep wells were connected at the station on July 1, and on August 29, one of these wells was cut out of service on account of the suction mains interfering with the building of the new station. It is proposed to construct a temporary plant, with engines connected to each one of the two systems of shallow wells, and also to the deep well system. The water pumped by this plant will be delivered into the main pump well, and the high pressure pumps at the station can therefore deliver solid water into the distribution system instead of the admixture of air and water, which at present is being delivered. It was expected, early in 1905, to lay the necessary main to feed the high ground around the Highland Boulevard, from the Mount Prospect service, but it was impossible to lay this main on account of the more urgent need of other mains, and it is now expected that within the next thirty days a new main will be laid from the 48-inch force main on Atlantic avenue, so that the New Lots Reservoir can be permanently put out of service and the boundary gates of the New Lots system opened. Under this system a much better pressure will be obtained on the high ground, as the equivalent elevation of the water in the mains will be 200 feet or more, while the present system gives an equivalent elevation of only about 165 feet. By opening the by-pass around the New Lots Reservoir, the Ridgewood water can be fed back through the 16-inch main and a much better supply for fire service will be available in the middle and eastern portion of the Twenty-sixth Ward than was formerly the case. Contracts were made for the new pumping station with Mr. James MacArthur and the trusses of the engine-house are in place, the chimney practically completed and all the walls nearly up to their full height. The contract for the boilers was awarded to B. F. Hart, Jr., & Co., and this work is well advanced. The contract for the steamfitting was awarded to E. Rutzler Company, but no work can be done under this contract until the boilers are in place. The new pumping engines are to be built by the Marine Engine and Machine Company, but this work was only recently awarded, and little progress has been made. The new driven well system is to be put in by our men, the castings necessary being called for under contract, for which bids were received on December 27. A reinforced steel concrete coal shed is to be built by Mr. Stacy P. Opdyke, Jr., under his contract which was signed on November 20. The foundation work has been completed, but the walls will not be put up during the winter weather.

Ridgewood, North Side.

A request was made in 1904 for the necessary money to extend this plant, but the appropriation was not sufficient to do more than provide a temporary pumping unit to help out during the time of remodeling, and also to provide the necessary money for the new buildings. Studies have been made for the new buildings and plans and specifications drawn. We have also prepared the specifications for the new boilers and high duty crank and flywheel engines, and it is expected that this work will be under contract towards the middle of 1906, if the necessary money be made available. The plan of remodeling this station contemplates the extension to the west of the present engine room and the building of a new boiler room to the north or west, together with a new chimney. It would be desirable to close Dinsmore place, which runs parallel to the station on the north, and thus give us sufficient ground for extending the station without being cramped for room. The old beam engine, built in about 1868, would be removed and four new engines constructed. Upon the completion of this work the removal and replacing of the Worthington engines on the south side could be commenced, if it was found that more engine capacity was required, as these machines are uneconomical and necessitate a large annual expenditure for repairs. The tests of the discharge of the engines, made with the Venturi meter and weir, showed that the present allowance for slippage was inadequate, and new figures have been adopted which will represent closely the actual amount pumped by the Ridgewood engines. As the determination of the pump displacement at infrequent intervals by the weir is somewhat unsatisfactory, studies are being made as to the best form of measuring apparatus to be placed, so that the discharge from each pump can be regularly checked. The engines have been all overhauled and repaired as required, but it is expected to remodel the steam end of the Davidson pumps, which have been working during the year on the Mount Prospect service. These engines, when first started on the new service, which increased the pressure about ten pounds, gave some trouble and two of the plunger rods were broken. Since then little difficulty has been experienced, with the exception of minor difficulties in the steam end. The west side boilers have had very little done to them and are in fair condition, considering their length of service. The Morris boilers have given considerable trouble throughout the year on account of the leaky condition of the tubes, although two of the boilers have already been remodeled by B. Franklin Hart, Jr., & Co., under their contract and are now in good condition, as are also the two new boilers furnished by James Beggs & Co., which were connected up and put into service the latter part of June. The Davidson boilers are being remodeled by E. Rutzler Company, the Hawley grates being taken out and the boilers overhauled and superheaters installed; the contractor has been delayed owing to our having to keep the boilers in service to run the plant, but he has already completed four of the boilers and it is expected that he can have the other boilers so as to complete the work early in the year.

Ridgewood, South Side.

As already stated, a contract was drawn for a temporary pumping unit to be used mainly during the time that the Ridgewood station was being overhauled. Bids were received for a 20,000,000-gallon centrifugal pump and the contract awarded to the Borough Construction Company, who were the lowest bidders. The contractors are working on this pump and as soon as it is ready to be put in place it will be set where engine No. 49 is at present located. Bids were also received for four water tube boilers to replace the Bigelow boilers, and it has been recommended that the contract be awarded to the R. J. F. Gerstle Company, who were the lowest bidders complying with the specifications. The present chimneys on the south side are inadequate for use with the new boilers, and a contract for two new chimneys has been made with H. R. Heinecke, Inc., the chimneys to be of the radial hollow brick type. This work cannot be taken up until progress is made on the boiler contract, as we need all the steam that can be generated at the present time. To provide additional steam for running engine No. 49 two 100-horse power locomotive boilers were bought from Donegan & Swift for $1,785; these boilers were placed by the Borough Construction Company at a cost of $450. A temporary shed will be built over the boilers by our men and they will be utilized while the other work of reconstruction and remodeling is going on.

As the engines both on the north and south side were being run beyond what would be considered the limits of safety, in order to meet the consumption, it was decided to overhaul and put in running condition the old Worthington engine known as No. 49, located in the pit just east of the south side engine room; this engine has been overhauled and is now ready to run, the cost being about $2,700. While it is quite possible that the engine will not be used, nevertheless its being ready for service in case one of the other engines breaks down would enable us to continue full supply when otherwise we would have to curtail the consumption, and it was therefore considered advisable to expend this money, even though the engine might never be used. This simply exemplifies the waste of money that is occasioned by delays in authorizing improvements (thus forcing the adoption of temporary and costly expedients), instead of carrying out the enlargement and improvement of the work when both safety and economy of operating the system demand it. The Worthington engines have given a good deal of trouble, and in June the No. 2 engine broke down, owing to the stripping of the high pressure rod, this break badly wrecking the valve motion. These engines will be replaced or abandoned as soon as the remodeling on the north side has progressed sufficiently to make it safe to cut out of service any of these engines.

On the boilers only the most necessary repairs were made to the Bigelow battery, as these boilers are to be replaced by water tube boilers. The Strong boilers were shut down during the fall so as to clean the smoke flue leading to the chimney, which was found to be so badly choked up with fine ashes that it took several days to remove the accumulation. The Sturtevant blower and air pipes are being overhauled so that we can burn Buckwheat coal in these boilers. The shop at this station has been kept very busy on turning out the necessary work for repairing the engines at the Ridgewood and Line stations, and the machinists have also done a good deal of cutting and threading of pipe for the driven well gangs.

Line Stations.

At Spring creek contracts have been prepared so as to remodel the boilers and burn No. 2 Buckwheat coal in place of the present broken coal. The engines are in poor condition and should be overhauled, unless they are to be replaced. The steam superheater shows a large saving in coal, and it is expected to fit out the second boiler with a steam device.

The temporary plant had not been run for about eighteen months until in the middle of November, when it was started up, it being necessary to remove all the smokestacks and put in twelve new tubes in the locomotive boiler. It is expected to shut down this plant as soon as the supply will warrant.

The Shetucket station was abandoned in August and the engine and boiler were taken out and shipped to the Oconee station, where they have been put in place and are shortly to be connected up and used in operating this station.

At Baiseleys, Jameco, Springfield, Forest Stream, Clear Stream, Watts Pond and Smiths Pond Stations minor repairs have been made as required, and as most of these stations are likely to be abandoned in the near future no extensive overhauling or remodeling will be done.

At the Millburn Station, the two new Worthington engines have been run almost constantly without trouble, except the plunger rod breaking twice, due to poor material. New rods have been put in by the contractor, which have not given any trouble. The five Davidson engines have been completely overhauled by the maker, Mr. M. T. Davidson, under a contract with the City, and are now in first-class condition. The west battery of boilers show that the five Davidson boilers will probably have to have new tubes during the coming year. The electric light plant broke down towards the end of December, but new parts have been ordered and a new form of governor will probably prevent a repetition of the accident.

The five stations on the new watershed have been in constant operation since the early summer and are all in fair condition. New steel smokestacks have been put up at Massapequa and Merrick and other repairs made as required. The yield from these stations has averaged a little more than 16,000,000 gallons daily. The Wantagh Infiltration Gallery Station is still in the hands of the contractors and has been run by their men.

Consolidation of Pumping Stations.

In previous reports the question of the consolidation of the pumping stations has been discussed, and, on the assumption that infiltration galleries were to be used, it was proposed to have nine stations on the watershed, exclusive of the Millburn Station. With the development of the tile well, and taking into consideration the increased cost of the infiltration galleries, the question arose as to whether it would be better to continue exclusively the construction of the infiltration galleries or adopt in some cases wells singly or in groups, spaced at such intervals that the full flow of the underground supply would be intercepted, these wells or groups of wells to be operated by power developed at one or more central stations. An investigation is now being made of the relative advantages of compressed air, electricity and hydraulic transmission power. The development of the watershed will be along the line which will show the greatest economy and it is possible that in some portions of the watershed the gallery will be more economical, while in other sections of the watershed it will be more advantageous to use the wells. No matter which system is adopted, there will be a great reduction in the cost of operation, due to the consolidating of our present stations, of which we now have twenty-five, including the three temporary plants at Culverts D, L and N, and the temporary plants at Spring Creek and New Lots. The cost of pumping the water supply of Brooklyn should reach its maximum in 1906, and unless there is delay in authorizing the necessary funds to carry out the proposed plans, the reduction in the cost of pumping should be rapid and we should be able to obtain a much larger supply at a reduced cost.

Coal.

The increased price of coal, together with the increased consumption, made it advisable to change the size of anthracite coal required and I therefore prepared a contract in the late spring calling for Pea, No. 1 Buckwheat and No. 2 Buckwheat coals, which were to be used as a trial order to see the relative economy of this coal as compared with the broken coal we had previously been using. The prices received for this coal indicated that there would be a reduction of about two-fifths in the price of the coal, which, after making due allowance for the increased cost of handling the larger amount of coal to be used, and also for the additional tonnage of coal, would, nevertheless, give a material saving in our fuel bill. As practically all the anthracite coal furnished to New York comes through the large companies, it was specified that the coal to be furnished should be one of seven different brands and that the original bill of lading should be furnished by the contractor. Heretofore our contracts provided for tests of the heating value of coals and the advisability of this clause, for the protection of the City's interests, is obvious. In view, however, of the growing opposition of the six or seven large companies which exclusively handle the anthracite coal, which has culminated in a refusal of all but one to bid directly for the coal if the test clause were retained, I have deemed it advisable and for the best interest of the City to omit in the present contract and hereafter all tests for the anthracite coal and to simply designate the mines from which the coal is to be delivered, requiring original bills of lading as vouchers. In the case of the bituminous coal the tests heretofore prescribed will be retained, as there is no difficulty in securing bids for this kind of coal with the test clause.

Our previous method of looking after the delivery of the coal after it has reached Long Island City opens a way for considerable abuse and I am now outlining a system of inspection making an employee definitely responsible for the different parts of the

work, and we should obtain in this way more satisfactory results and the City's interests be better guarded.

Ponds, Conduits and Reservoirs.

On July 22, Mr. G. V. Brower, who previously held the position of Foreman of Laborers, was placed in charge of the Ponds, Conduits and Reservoirs east of Spring creek, under the title of Superintendent of Ponds and Reservoirs. The work of caring for the supply has been carefully looked after by the men under Mr. Brower's direction, but lack of force has prevented a great deal of work being done which would improve the physical appearance of our line and which should be done both to protect the City's property and to prevent it becoming a nuisance to surrounding property. The condition of our conduit line is one which would not be permitted by any up-to-date corporation and we should have sufficient appropriation to allow us to place neat fences around all City property, grade and trim the conduit line, grade and seed the grounds around the pumping stations, and to keep them in a first-class condition. The appearance of the grounds has a great deal to do with the impression made on our citizens by an inspection of our watershed, and if the grounds are poorly kept there is immediately a suspicion aroused in the mind of the observer that the quality of the supply is neglected as well as the physical condition of the property. It is therefore to be hoped that sufficient men and money will be allotted to this work, so that the conditions can be greatly improved in the future over what they have been in the past.

The panning of closets has been extended to cover the Baiseleys Stream and a great improvement has been made in the quality of the supply from this stream, which is filtered at the Baiseleys plant.

The work of patroling and watching the streams and ponds has been carried out as usual, and the following table gives a summary of the work done:

Near Foster's Meadow stream	1,780
Near Springfield stream	2,335
Near Valley stream	625
Near Schodack brook	361
Near Hempstead	9,750
Near Pines brook	407
Near Millburn stream	320
Near East Meadow stream	303
Near Wantagh stream	689
Along Conduit line	3,023
Total	19,593

The total cost of this work during the year was $4,190.90.

Reference has already been made to the inadequacy of the existing conduit, and we have therefore been unable to lower the water level sufficiently to examine the brick conduit. With the completion of the new pipe line it is hoped that the conduit can be given a thorough inspection and all necessary repairs made. An attempt was made to rebuild the north end of Culvert C, as the necessary land was not obtained prior to the completion of the contract for laying the 48-inch pipe line. Title to this land, as well as other parcels which were not obtained prior to the building of the 48-inch additional pipe conduit, was obtained by the appointment of the Commissioners on March 3, 1905, but we were compelled to postpone the building of this culvert because the men were needed for more important and urgent work.

The use of the Clear Stream Pond will be discontinued probably during January as the new wells being put into the Clear Stream Station will enable us to absorb all the water obtained from the Clear Stream Pond.

The water in the distribution reservoirs has been very low at different times during the year and we have had trouble with the growth of diatoms in the Ridgewood and Mt. Prospect basins. It was necessary to cut off the supply of water from the Ridgewood Basin No. 3 from June 30 to July 30, and from September 25 to December 24, on account of the development of a heavy growth of Synedra, while the growth of the Asterionella in the Mt. Prospect basin made it necessary to cut out this basin from May 3 to May 17, and from June 24 to June 29. The diatom growth gave comparatively little trouble in the watershed, with the exception of the Baiseleys Pond, where a heavy growth of Synedra in the latter part of September made it necessary to practically close down this supply from September 23 to October 1. This growth does not yield to the copper sulphate treatment, and it was only cleared up by the advent of cold weather.

Contracts.

The following summary shows the contracts which have been prepared and forwarded for approval, printing and advertising, those for which bids have been received and those on which work has been done during the year:

Contracts Prepared and Forwarded for Approval, Printing and Advertising.

1. For furnishing and delivering double nozzle hydrants.
2. For furnishing, constructing and installing five (5) electrically driven pumps, with all appliances complete, for high pressure fire service, in a pumping station to be erected on the northeast corner of Furman and Joralemon streets.
3. For furnishing, constructing and installing three (3) electrically driven pumps, with all appliances complete, for high pressure fire service, in a pumping station to be erected on the northwest corner of Willoughby and St. Edwards streets.
4. For furnishing and delivering semi-bituminous and anthracite coal.
5. For furnishing, delivering and laying water mains and appurtenances in Hicks, Joralemon, Furman and Willoughby streets.
6. For furnishing water to the Twenty-ninth Ward, Borough of Brooklyn.
7. For tapping 20-inch and 30-inch water mains in service, and hauling and setting 6-inch hydrant service mains, fire hydrants and appurtenances on various streets.
8. For remodeling and extending the Massapequa Pumping Station, including the pumping plant, pump well and infiltration gallery system, together with the necessary appurtenances.
9. For the use of fire hydrants in certain sections of the Borough of Brooklyn.
10. For furnishing and delivering cast iron pipe and special castings.
11. For erecting the new Gravesend Pumping Station, on Avenue S, between East Sixteenth and East Seventeenth streets.
12. For furnishing, delivering and erecting the necessary steam fitting at the new Gravesend Pumping Station.
13. For furnishing, constructing and erecting one pumping engine, with all appliances complete, at the new Gravesend Pumping Station.
14. For furnishing, delivering, erecting and connecting two boilers and one economizer at the new Gravesend Pumping Station.
15. For furnishing, constructing and erecting the new New Lots Pumping Station, near Blake and New Lots avenues.
16. For furnishing, delivering, erecting and connecting two (2) pumping engines, including foundations, auxiliaries and piping, at the new New Lots Pumping Station.
17. For furnishing, delivering and erecting the necessary steam fitting and appurtenances at the new New Lots Pumping Station.
18. For furnishing, delivering and erecting three (3) boilers at the new New Lots Pumping Station.
19. For furnishing, delivering and erecting a temporary pumping plant at the new Ridgewood Pumping Station.
20. For furnishing, delivering, erecting and connecting four (4) water tube boilers at the new Ridgewood Pumping Station.
21. For furnishing and erecting two (2) new brick chimneys at the new Ridgewood Pumping Station.
22. For furnishing and delivering stop-cocks for distribution mains.
23. For furnishing and delivering cast iron special castings.
24. For furnishing, delivering and laying water mains and appurtenances in Metropolitan, Morgan, Maspeth and Paidge avenues, etc.
25. For furnishing, constructing and erecting an engine house for high pressure fire service at Furman and Joralemon streets.
26. For furnishing, constructing and erecting an engine house for high pressure fire service at Willoughby and St. Edwards streets.
27. For furnishing, delivering and erecting the necessary plumbing and gas fitting for the high pressure fire service station at Furman and Joralemon streets.
28. For furnishing, delivering and erecting the necessary plumbing and gas fitting for the high pressure fire service station at Willoughby and St. Edwards streets.
29. For furnishing and delivering stop-cocks.
30. For furnishing, delivering and laying water mains and removing existing water mains in Wythe and Franklin avenues and in Graham, Hewes, Clymer, Morton, etc., etc.
31. For furnishing and delivering cast iron stop-cock boxes and manhole heads.
32. For overhauling and repairing the Davidson engines at the Millburn Pumping Station.
33. For furnishing and delivering vitrified, salt glazed, stoneware hub and spigot pipe.
34. For furnishing and erecting a wrought iron fence, with gates, at the Mt. Prospect Reservoir.
35. For furnishing, delivering and constructing a pipe drain at the Forest Stream Filter Beds.
36. For furnishing, delivering and laying a 30-inch water main and appurtenances in Avenue S and in East Sixteenth street.
37. For furnishing and erecting two (2) steel smokestacks at the Massapequa Pumping Stations and three (3) steel smokestacks at the Merrick Pumping Station.
38. For hauling and laying water mains and appurtenances in the Borough of Brooklyn.
39. For furnishing and delivering stopcocks.
40. For furnishing and delivering semi-bituminous and anthracite coal.
41. For grading, soiling, seeding and sodding the grounds around the new Ridgewood Pumping Station, and a portion of the grounds at the old Ridgewood Pumping Station.
42. For constructing two (2) additional filter beds, with all their appurtenances complete, near the Hempstead Storage Reservoir.
43. For furnishing and delivering cast iron flanged pipe, special castings, etc.
44. For furnishing, constructing and erecting a concrete coal shed near Blake and New Lots avenues.
45. For furnishing and delivering cast iron stopcock boxes and covers.
46. Contract with the Edison Electric Illuminating Company for carrying the cables necessary to furnish the power to the High Pressure Pumping Stations through the ducts of the company and for maintaining said cables.
47. Contract with the Long Island Railroad Company for the construction of a private siding at Wantagh, L. I.
48. Contract with the Long Island Railroad Company for the construction of a private siding at Massapequa, L. I., for the Massapequa Infiltration Gallery Pumping Station.
49. For unloading, hauling, storing and trimming the coal required for various pumping stations.
50. For furnishing, constructing and erecting the Canarsie Pumping Station, near Avenue D and Remsen avenue.
51. For furnishing, delivering and erecting three (3) boilers at the new Canarsie Pumping Station.
52. For furnishing, delivering and erecting the necessary steamfitting and appurtenances at the new Canarsie Pumping Station.
53. For furnishing, delivering, erecting and connecting two (2) pumping engines, including foundations, auxiliaries and piping, at the proposed Canarsie Pumping Station.
54. For furnishing and delivering stopcocks.
55. For furnishing, delivering, erecting and connecting a pumping plant in the remodeled Ridgewood North Side Pumping Station.
56. For furnishing, delivering and laying water mains and appurtenances in Blake and Fountain avenues.
57. For furnishing, delivering and erecting five (5) boilers at the Ridgewood North Side Pumping Station.
58. For furnishing and delivering lumber.
59. For furnishing and installing grate bars, blowers, etc., at the Ridgewood and Spring Creek Pumping Stations.
60. For furnishing and delivering double-nozzle hydrants.
61. For furnishing, delivering and installing superheaters and piping at various pumping stations.
62. For furnishing, delivering and laying water mains and appurtenances in Fort Hamilton, Gravesend, Tenth, First, Eighth, Stillwell and Twenty-fourth avenues, etc.
63. For furnishing, delivering and laying a 72-inch riveted steel pipe line from the Borough of Brooklyn to Valley Stream, L. I.

Contracts for Which Bids Were Received, Together with Name of Lowest Bidder and Total Amount Bid, on Basis of Engineer's Estimate of Work to Be Done.

1. January 6—For furnishing, delivering and laying high pressure fire service mains and appurtenances:

John J. Cashman	$792,601 50

2. January 11—For repairing the ten internally fired Morris boilers at the Ridgewood Pumping Station:

B. Franklin Hart, Jr., & Co.	$30,884 00

3. January 11—For furnishing and delivering iron and brass pipe, fittings, valves, etc.:

Group 1—T. R. McMann's Sons	$5,900 00
Group 2—Crane Company	3,308 00
Group 3—Crane Company	979 00
Group 4—T. R. McMann's Sons	486 00
Group 5—T. R. McMann's Sons	2,385 00

4. January 25—For unloading, hauling, storing and trimming the coal required for various pumping stations:

Section 1—Harry Blinn	$7,002 00
Section 2—John B. Reimer	3,850 00
Section 3—Harry Blinn	4,424 00

5. February 1—For furnishing and delivering four nozzle post hydrants and two nozzle fireboat connection hydrants for high pressure fire service mains:

John Fox & Co.	$54,995 00

6. February 1—For hauling and laying water mains and appurtenances in the Borough of Brooklyn:

Murphy Bros.	$13,475 00

7. April 12—For furnishing and delivering double-nozzle hydrants:

Section 1—Herron Pump and Foundry Company	$11,800 00
Section 2—Herron Pump and Foundry Company	18,000 00

8. May 24—For furnishing, delivering and laying water mains and appurtneances in Hicks, Joralemon, Furman and Willoughby streets:

John J. Cashman	$17,966 00

9. May 24—For tapping 20-inch and 30-inch water mains in service, and hauling and setting 6-inch hydrant service mains, fire hydrants and appurtenances on various streets:

John William Griffin	$26,225 00

All bids for this contract were rejected and the contract readvertised.

10. June 7—For furnishing and delivering stopcocks for distribution mains:

Rensselaer Manufacturing Company	$3,546 05

11. June 7—For furnishing and delivering cast iron special castings:

John Fox & Co.	$2,300 00

12. June 21—For furnishing and delivering semi-bituminous and anthracite coal:
Section 1—Geo. D. Harris & Co..... $70,375 00
Section 2—Rudolph Reimer 261,224 00

13. July 5—For furnishing and delivering cast iron pipe and special castings:
United States Cast Iron Pipe and Foundry Company..... $73,412 50

14. July 19—For furnishing, constructing and installing five (5) electrically driven pumps, with all appliances complete, for high pressure fire service, in a pumping station to be erected on northeast corner of Furman and Joralemon streets:
D'Olier Engineering Company..... $111,061 00

15. July 19—For furnishing, constructing and installing three (3) electrically driven pumps, with all appliances complete, for high pressure fire service, in a pumping station to be erected on the northwest corner of Willoughby and St. Edwards streets:
D.Olier Engineering Company..... $64,322 50

16. July 19—For remodeling and extending the Massapequa Pumping Station, including the pumping plant, pump well and infiltration gallery system, together with the necessary appurtenances:
Michael J. Dady..... $327,850 00

17. July 19—For furnishing, constructing and erecting the new New Lots Pumping Station:
James MacArthur $22,268 00

18. July 19—For furnishing, delivering and erecting three (3) boilers at the new New Lots Pumping Station:
B. Franklin Hart, Jr., & Co..... $14,295 00

19. July 19—For furnishing, delivering and laying water mains and appurtenances in Metropolitan, Morgan, Maspeth and Paidge avenues, etc.:
Isaac Harris $40,023 00

20. July 19—For furnishing and delivering stop-cocks:
Rensselaer Manufacturing Company..... $3,165 00

21. August 9—For furnishing and delivering all the necessary materials and labor required in the erection of a new Gravesend Pumping Station:
Ryan & McFerran..... $22,733 00

22. August 9—For furnishing, delivering and erecting the necessary plumbing and gasfitting for the high pressure fire service station at Furman and Joralemon streets:
Dowdeswell Bros. $2,638 00

23. August 9—For furnishing, delivering and erecting the necessary plumbing and gas fitting for the high pressure fire service station at Willoughby and St. Edwards streets:
Dowdeswell Bros. $2,427 00

24. August 9—For furnishing and delivering cast iron stop-cock boxes and manhole heads:
Lynchburg Foundry Company..... $3,144 00

25. August 9—For overhauling and repairing the Davidson engines at the Millburn Pumping Station:
M. T. Davidson..... $4,385 00

26. August 16—For furnishing, constructing and erecting one pumping engine, with all appliances complete, at the new Gravesend Pumping Station:
The Snow Steam Pump Works..... $23,900 00

27. August 16—For furnishing, delivering, erecting and connecting two boilers and one economizer at the new Gravesend Pumping Station:
United Heating Company..... $11,700 00

28. August 16—For furnishing, delivering and erecting the necessary steam fitting and appurtenances at the new New Lots Pumping Station:
E. Rutzler Company..... $7,789 00

29. August 16—For furnishing, delivering and erecting a temporary pumping plant at the new Ridgewood Pumping Station:
Borough Construction Company..... $37,589 30

30. August 16—For furnishing, delivering, erecting and connecting four (4) water tube boilers at the new Ridgewood Pumping Station:
Ralph J. F. Gerstle Company..... $26,987 00

Bids for this contract were rejected, and the contract was readvertised.

31. August 16—For furnishing, constructing and erecting an engine house for high pressure fire service at Furman and Joralemon streets:
Hahn & O'Reilly..... $78,000 00

Bids for this contract were rejected.

32. August 16—For furnishing, constructing and erecting an engine house for high pressure fire service at Willoughby and St. Edwards streets:
Hahn & O'Reilly..... $64,000 00

Bids for this contract were rejected.

33. September 6—For furnishing, delivering and erecting the necessary steamfitting, together with all auxiliaries complete, at the New Gravesend Pumping Station:
William Horne Company..... $4,374 00

34. September 6—For furnishing, delivering, erecting and connecting two (2) pumping engines, including foundations, auxiliaries and piping, at the new New Lots Pumping Station:
Marine Engine and Machine Company..... $39,500 00

35. September 6—For furnishing and erecting two (2) new brick chimneys at the new Ridgewood Pumping Station:
H. R. Heinicke, Incorporated..... $8,475 00

36. September 6—For furnishing, delivering and laying water mains and removing existing water mains in Wythe and Franklin avenues and in Graham, Hewes, Clymer, etc., etc.:
Thomas O'C. Sloane..... $65,802 25

37. September 6—For hauling and laying water mains and appurtenances in the Borough of Brooklyn:
Isaac Harris $26,171 00

38. October 11—For furnishing and delivering vitrified salt glazed stoneware hub and spigot pipe:
J. P. Duffy & Co..... $2,462 00

39. October 11—For furnishing, delivering and constructing a pipe drain at the Forest Stream Filter Beds:
Isaac Harris Company..... $4,082 50

40. October 11—For furnishing, delivering and laying a 30-inch water main and appurtenances in Avenue S and in East Sixteenth street:
James P. Graham..... $15,497 50

41. October 11—For furnishing and erecting two (2) steel smoke stacks at the Massapequa Pumping Station and three (3) steel smoke stacks at the Merrick Pumping Station:
P. J. Donohue & Sons..... $990 00

42. October 11—For furnishing and delivering stop-cocks:
McMann & Taylor..... $11,937 50

43. October 11—For grading, soiling, seeding and sodding the grounds around the new Ridgewood Pumping Station, etc.:
John Reilly $6,630 00

44. October 25—For furnishing and delivering semi-bituminous and anthracite coal:
Section I. A. M. Wittenberg..... $12,760 00
Section II. Rudolph Reimer..... 86,104 00

45. October 25—For furnishing, constructing and erecting a concrete coal shed, rear Blake and New Lots avenues:
Stacy B. Opdyke, Jr..... $2,628 00

46. October 25—For tapping 20-inch and 30-inch water mains in service and hauling and setting 6-inch hydrant service mains, fire hydrants, etc.:
Thomas O'C. Sloane..... $31,632 50

47. November 8—For furnishing, delivering, erecting and connecting four (4) water tube boilers at the new Ridgewood Pumping Station:
Heine Safety Boiler Company..... $28,800 00

48. November 8—For constructing two (2) additional filter beds, with all their appurtenances complete, near the Hempstead storage reservoir:
Charles Hart $13,121 50

49. December 20—For furnishing and delivering lumber:
Brooklyn Lumber Company $27,100 00

50. December 27—For furnishing and erecting a wrought iron fence, with gates, at the Mount Prospect Reservoir:
New Jersey Foundry and Machine Company..... $4,939 00

51. December 27—For furnishing and delivering cast iron flange pipe, special castings, etc.:
M. J. Drummond & Co..... $9,172 20

52. December 27—For furnishing and delivering cast iron stop-cock boxes and covers:
Herron Pump and Foundry Company..... $10,120 00

Brief Description of Contracts on Which Work Has Been Done During the Year.

1. For furnishing, delivering, erecting and constructing two new boilers at the Millburn Pumping Station:
Edwin Burhorn, contractor.
Date of contract, September 20, 1902.
Certification, $11,400.
The work under this contract was completed on April 24, 1904, the final estimate amounting to $13,500. The guarantee period expired on April 24, 1905, on which date the retained percentage became due.

2. For furnishing, etc., a pumping plant at the Millburn Pumping Station:
Henry R. Worthington, contractor.
Date of contract, September 17, 1902.
Certification, $51,000.
Date of completion of contract, August 24, 1904. Date of expiration of guarantee period, August 24, 1905.

3. For furnishing and laying water mains in Gravesend, Twenty-third avenues, etc.:
Isaac Harris, contractor.
Date of contract, February 18, 1903.
Certification, $133,934.60.
Contractor ordered to begin work on March 16, 1903. The contract was completed on May 21, 1904. The guarantee period expired on May 21, 1905, when certificate to that effect was issued.

4. For furnishing and laying a 48-inch trunk water main from Ridgewood Reservoir to Myrtle avenue and Broadway:
New York Continental Jewell Filtration Company, contractors.
Date of contract, June 27, 1903.
Certification, $236,759.
The contractors were ordered to commence work on July 27, 1903. On August 24, 1904, the time of completion of the contract was extended until November 1, 1904. The work was finally completed on October 4, 1904, and a final estimate, amounting to $236,239.54 was rendered on December 3, 1904.
On October 4, 1905, the guarantee period expired, and on October 23, 1905, a certificate for the payment of the retained percentage was issued.

5. For constructing the Wantagh Infiltration Galleries:
New York Continental Jewell Filtration Company, contractors.
Date of contract, June 27, 1903.
Certification, $130,285.

Work on this contract was resumed on April 24. The work done during the year was as follows:

Pipe Laid.	West Leg.	East Leg.	Total.
	Feet.	Feet.	Feet.
36-inch, vitrified	771.5	618.58	1,390.08
33-inch, vitrified	1,072.33	.....	1,072.33
30-inch, vitrified	1,042.17	34.21	1,076.38
30-inch, cast iron	.....	1,826.38	1,826.38
27-inch, vitrified	319.75	.....	319.75
Total	3,205.75	2,479.17	5,684.92

6. For furnishing and laying 36-inch main on Atlantic avenue, between Carlton and Flatbush avenues:
John J. Cashman, contractor.
Date of contract, July 1, 1903.
Certification, $24,938.50.
This contract was entirely completed on May 31, 1904, and on May 31, 1905, the guarantee period expired, and a certificate for the payment of the retained percentage was issued.

7. For furnishing, delivering and laying a 48-inch force main from the Ridgewood Pumping Station to Mount Prospect Reservoir and tower.
John J. Cashman, contractor.
Date of contract, July 6, 1903.
Certification, $422,247.50.

The work on this contract was entirely completed on November 30, 1904, and on November 30, 1905, the guarantee period expired, and on December 11, 1905, a voucher for the payment of the retained percentage was issued.

8. For constructing two (2) filter beds near the Forest Stream Pumping Station:
Isaac Harris, contractor.
Date of contract, August 24, 1903.
Certification, $50,000.

The work on this contract was entirely completed on December 31, 1904. Water was turned on the beds on January 9, 1905. The beds have been in operation since that time, except during the time when they have been cleaned.

9. For furnishing and laying mains and removing existing mains in Columbia, Furman, Water, etc.:
M. J. Dady, contractor.
Date of contract, September 18, 1903.
Certification, $213,626.15.

The work to be done under this contract was entirely completed on November 16, 1904. On February 28, 1905, the final estimate, amounting to $228,601.38, was rendered. The guarantee period expired on November 16, 1905, when certificate for the payment of the retained percentage was issued.

10. For furnishing, delivering and laying mains in Broadway, Park avenue, Sumner place and Humboldt street:
M. J. Dady, contractor.
Date of contract, September 18, 1903.
Certification, $60,302.50.

The pipe laying was completed on July 18, 1904, and the mains filled on August 9, 1904. The work was entirely completed on July 30, 1904. The guarantee period expired on July 30, 1905, when final certificate was issued.

11. For furnishing, delivering and laying mains in Provost, Grove, Etna, etc.
Isaac Harris, contractor.
Date of contract, October 21, 1903.
Certification, $111,816.50.

The work of pipe laying was completed on August 22, 1904, but, owing to difficulty in checking up the pipe used and on account of the pavements not being properly replaced, the final estimate was not issued until August 24, 1905. The guarantee period will not expire, therefore, until August 24, 1906.

12. For installing steam engines, generators, electric wiring, etc., for the Ridgewood Engine House, Springfield and Baiseleys Filter Plants, and Mount Prospect Reservoir.
Wm. H. Sheehan & Co., contractors.
Date of contract, August 13, 1904.
Certification, $5,917.

The contractors were ordered to begin work on this contract on September 12, 1904, and on February 3, 1905, the work was fully completed. Payment of the retained percentage will be due on February 3, 1906.

13. For furnishing and laying mains and removing existing mains in Conover, Williams, Imlay, etc.
M. J. Dady, contractor.
Date of contract, January 22, 1904.
Certification, $475,822.50.

The work done on this contract during the year was as follows:

Size of Main.	Linear Feet Laid.	Linear Feet Removed.	Number of Gates Set.	Number of Gates Removed.	Number of Hydrants Set.	Number of Hydrants Removed.
24-inch	488	.....	1	.....	.....	.....
20-inch	16,300	.....	23	.....	.....	.....
16-inch	26	.....	.....	.....	.....	.....
12-inch	291	.....	8	.....	.....	.....
8-inch	2,354	10,102	71	15	.....	.....
6-inch	1,386	8,608	57	95	.....	.....
Total	20,845	18,710	160	110	108	29

The pipe laying was completed on July 12, 1905, but, on account of all pavements not having been properly replaced by the contractor, the final estimate has not yet been passed.

14. For laying water mains in Seventy-ninth, Eightieth, Eighty-first and Eighty-second streets, etc.
Edward Taylor, contractor.
Date of contract, April 27, 1904.
Certification, $5,325.70.

The work on this contract was completed on August 31, 1904. The guarantee period expired on August 31, 1905, but owing to the failure of the contractor to properly repair the pavements, no certificate for the payment of the retained percentage has as yet been issued.

15. For furnishing and erecting a steam turbine pump at the Mount Prospect Pumping Station.
D'Olier Engineering Company, contractors.
Date of contract, July 11, 1904.
Certification, $14,855.

The contractors were ordered to begin work on August 1, 1904. Three extensions of time for the completion of the contract were granted to the contractors, as follows:
November 10, 1904, 45 days; January 21, 1905, 60 days; April 17, 1905, 45 days.

The pump was completed and put in service on March 9, 1905, and the official test was held on April 21 and 22, the pump being found satisfactory and in compliance with the specifications. It has since been in almost constant use, giving very satisfactory service. The final payment on this contract will be due in April, 1906.

16. For furnishing, delivering and laying high pressure fire service mains and appurtenances at Coney Island.
Borough Construction Company, contractors.
Date of contract, September 24, 1904.
Certification, $40,722.95.

The contractors were ordered to begin work on the contract on October 24, 1904. On July 21, 1905, the time of completion of the contract was extended until August 1, 1905. The work done during the year was as follows:

Size of Main.	Linear Feet Laid.	Gates Set.	3-Nozzle Hydrants Set.	4-Nozzle Hydrants Set.
24-inch	52	.....	.....	.....
16-inch	3,815	5	.....	.....
12-inch	2,692	6	.....	.....
8-inch	359	50	.....	.....
Total	6,918	61	19	28

The contract was completed on August 1, 1905, and the final estimate rendered on October 7, 1905.

17. For furnishing and erecting gas engines and pumps at Coney Island.
B. Franklin Hart, Jr., & Co., contractors.
Date of contract, October 7, 1904.
Certification, $35,685.

The contractors were ordered to begin work on October 27, 1904. On September 22, 1905, the time of completion was extended until September 30, 1905, the contract being completed on that date. The engines, however, were completed and put in operation since the beginning of September, 1905, the plant being ready to answer fire calls since that date; the station responded to actual fire calls on two occasions with entire success. The engines and pumps were tested for endurance and capacity on December 28, 1905.

18. For building an engine house for the High Pressure Fire Service System at Coney Island.
Christopher Nally, contractor.
Date of contract, September 29, 1904.
Certification, $9,388.

The contractor was ordered to begin work on October 24, 1904. On September 28, 1905, the time of completion was extended until October 2, 1905, when the contract was completed. The final estimate was passed on November 11, 1905.

19. For furnishing and delivering two (2) 200 horsepower internally fired marine type boilers at the Ridgewood Pumping Station.
James Beggs & Co., contractors.
Date of contract, September 29, 1904.
Certification, $5,744.

The contractors were ordered to begin work on October 24, 1904. On December 5, 1904, the time of completion was extended sixty days. The contract was entirely completed on February 17, 1905, and the final estimate rendered on March 1, 1905. The work of erecting and connecting these boilers was done by Department men, the boilers being put in service at the end of June. Since then they have materially helped in the operation of the plant.

20. For remodeling the Davidson Boiler Plant at the Ridgewood Engine House.
E. Rutzler Company, contractors.
Date of contract, January 4, 1905.
Certification, $8,847.

The contractors were ordered to begin work on February 6, work being actually started in the spring. Only four of the boilers have been remodeled so far, as the balance of the battery could not be spared from service.

21. For hauling and laying water mains in Hart, North Tenth, Crown, Seventy-third, Centre, Eighty-sixth, etc.
Daniel Douglass, contractor.
Date of contract, January 9, 1905.
Certification, $35,419.75.

The contractor was ordered to begin work on March 1. The work done during the year was as follows:

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
20-inch	1,838	3	....
16-inch	1,054	3	....
12-inch	28,188	50	....
8-inch	35,848	76	....
6-inch	27,331	94	....
Total	94,259	226	339

The work of pipe laying was completed on November 8, 1905; and the final estimate is being prepared.

22. For furnishing, delivering and laying a 20-inch water main on Twenty-fourth avenue, from Eighty-sixth street to Cropsey avenue, etc.
Isaac Harris, contractor.
Date of contract, January 24, 1905.
Certification, $43,429.

The contractor was ordered to commence work on March 8, and the contract time expired on July 7. The work was not completed at that time and the contractor was granted an extension of time of thirty (30) days. The work done was as follows:

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
20-inch	8,650	8	....
16-inch	1,315	5	....
12-inch	86	4	....
8-inch	118	7	....
6-inch	210	21	....
Total	10,379	45	19

The contract was completed on August 7, and the final estimate, amounting to $40,925.37, was rendered on October 16.

23. For repairing the ten internally fired Morris boilers at the Ridgewood North Side Pumping Station.
B. Franklin Hart, Jr., & Co., contractors.
Date of contract, February 8, 1905.
Certification, $30,884.

The contractors were ordered to commence work on this contract on March 15. The work of repairs has progressed as speedily as the operation of the plant allowed, two of the remodeled boilers being in service.

24. For furnishing, delivering and laying high pressure fire service mains and appurtenances.
John J. Cashman, contractor.
Date of contract, February 6, 1905.
Certification, $792,601.50.

The contractor was ordered to commence work on March 1. Ground was broken for laying the mains on June 27, and the total work done to December 31, 1905, was as follows:

Size of Main.	Linear Feet Laid.	Gates Set.
20-inch	5,515	13
16-inch	7,098	23
12-inch	13,134	40
8-inch	380	157
Total	26,127	233

A number of pressure tests have been held on different sections of the mains laid during the year, the results of which are shown in Table No. 33.

25. For hauling and laying water mains and appurtenances.
Murphy Brothers, contractors; Isaac Harris, assignee.
Date of contract, February 24, 1905.
Certification, $13,475.

The contractor was ordered to begin work on April 3, 1905. The mains laid, gates and hydrants set under this contract were as follows:

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
20-inch	778	1	....
12-inch	10,596	25	....
8-inch	20,686	56	....
6-inch	1,711	40	....
Total	33,771	122	114

The contract was completed on July 26, 1905, and the final estimate passed on October 16.

26. For furnishing, delivering and laying water mains and appurtenances in Hicks, Joralemon, Furman and Willoughby streets.
John J. Cashman, contractor.
Date of contract, June 12, 1905.
Certification, $17,966.

The contractor was ordered to begin work on July 15, 1905, the actual work of pipe laying being begun on September 25. On October 16, the time of completion was extended fifty (50) days. The work done was as follows:

Size of Main.	Linear Feet Laid.	Gates Set.
30-inch	1,080	4
24-inch	87	4
20-inch	304	2
6-inch	30	4
Total	1,501	14

The work has been practically completed, with the exception of about 60 feet of the 30-inch pipe in Joralemon street.

27. For furnishing, constructing and erecting the new New Lots Pumping Station.
James MacArthur, contractor.
Date of contract, August 3, 1905.
Certification, $22,268.

The contractor was ordered to begin work on August 21. Actual work was begun on the same day and very good progress made, all trusses being in place and all the walls nearly complete.

28. For furnishing, delivering and laying water mains in Metropolitan, Morgan, Maspeth, etc.
Isaac Harris, contractor.
Date of contract, August 4, 1905.
Certification, $40,023.

The contractor was ordered to begin work on August 25, and on September 5 the actual work of pipe laying was commenced. The work done was as follows:

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
20-inch	7,400	12	....
16-inch	1,180	4	....
12-inch	80	2	....
8-inch	1,495	17	....
6-inch	350	64	....
Total	10,505	99	63

The work of pipe laying was completed on December 15; some repaving of streets yet remains to be done.

29. For furnishing, delivering and erecting three (3) boilers at the new New Lots Pumping Station.
B. Frank Hart, Jr., & Co., contractors.
Date of contract, August 16, 1905.
Certification, $14,295.

The contractors were ordered to commence work on September 1. By the end of the year one boiler has been nearly completed, another is more than half finished and work has started on the third. The work is being done in a satisfactory manner and in strict compliance with the specifications.

30. For constructing the Massapequa Infiltration Gallery System.
Michael J. Dady, contractor.
Date of contract, August 16, 1905.
Certification, $327,850.

The contractor started the work on this contract on August 7, though he was not ordered to do so until September 1. The contractor has built the road leading from the old pumping station to the new one with an iron bridge over the creek. The engine and boiler house are nearing completion. The pump well is nearly completed and the 48-inch cast-iron discharge pipe is partly laid. At the west end of the gallery 150 linear feet of 20-inch vitrified pipe have been laid. From the temporary pumps at stations 2 + 65, 26 + 40, 78 + 00 and at the brick well, water is being pumped into the conduit. Manholes are also being sunk at stations 39 + 25, 55 + 10, 68 + 00 and 99 + 50, and from all these it is soon expected to pump water into the conduit.

31. For erecting the new Gravesend Pumping Station.
Ryan & McFerran, contractors.
Date of contract, August 23, 1905.
Certification, $22,733.

The work on this contract was started on the date ordered, September 11, 1905, and has been carried on with due diligence, the walls being already above grade and the window frames set. If the weather continues favorable, the building will be completed before the spring of 1906.

32. For overhauling and repairing the Davidson engines at the Millburn Pumping Station.
M. T. Davidson, contractor.
Date of contract, August 23, 1905.
Certification, $4,385.

The contractor was ordered to commence work on September 11. The work of overhauling the engines was immediately started by the contractor, the contract being entirely completed on November 20.

33. For hauling and laying water mains and appurtenances.
Isaac Harris, contractor.
Date of contract, September 25, 1905.
Certification, $26,171.

The contractor was ordered to commence work on October 23. The work has progressed very favorably, the amount of pipe laid, gates and hydrants set to December 31 being as follows:

Size of Main.	Linear Feet Laid.	Gates Set.	Hydrants Set.
20-inch	27	....	....
16-inch	1,536	2	....
12-inch	3,960	10	....
8-inch	25,920	66	....
6-inch	1,451	23	....
Total	32,894	101	111

This contract should be completed early in the spring of 1906.

34. For grading, soiling, seeding and sodding the grounds around the new Ridgewood Pumping Station, etc.
John Reilly, contractor.
Date of contract, November 8, 1905.
Certification, $6,630.

The contractor was ordered to begin work on December 4. He had already, however, started the work on October 25, having waived notice to begin work. The contract was entirely completed on December 18, and the final estimate is being made.

35. For furnishing, delivering and constructing a pipe drain at the Forest Stream Filter Beds.
Isaac Harris Company, contractors.
Date of contract, November 6, 1905.
Certification, $4,082.50.

The contractors were ordered to begin work on December 6. Work was actually started immediately, and up to December 31, 744 linear feet of 20-inch vitrified pipe had been laid.

Appropriations Asked For and Granted.

In my letter to Deputy Commissioner Farrell, dated April 11, 1905, I requested that appropriations be granted for the following works:

Item.	Proposed Works.	Estimated Cost.
1.	New conduit from Massapequa to Ridgewood reservoir	$2,750,000 00
2.	Remodeling Ridgewood engine house	650,000 00
3.	Extension of distribution	200,000 00
4.	A driven well plant within the borough limits, including a connecting main with the distribution system	275,000 00
5.	Watts pond infiltration gallery	100,000 00
6.	Infiltration gallery at Oconee	200,000 00
7.	Removing and relaying small tuberculated mains	200,000 00
8.	Boundary trunk mains for the Mount Prospect system	170,000 00
9.	Trunk mains through the old Long Island water supply system, in the Twenty-sixth Ward	70,000 00
10.	Additional hydrants on existing large mains	50,000 00
11.	Filter beds for Valley stream	75,000 00
12.	Filter beds for Schodack brook and Pines pond	50,000 00
13.	Land on the watershed for protection from pollution	200,000 00
14.	Coal sheds for the Millburn pumping station	100,000 00
	Total estimated cost	$5,090,000 00

The report of the Engineer of the Finance Department to the Board of Estimate and Apportionment stated that these works were all necessary, but recommended that the amount be reduced to $3,390,000. The Board of Estimate passed this amount on June 23, but up to the present time the Aldermen have not approved the issue of the bonds, and we therefore have no money available for the work, which should be commenced early this year. These appropriations were made with the understanding that the amounts asked should be reduced to a minimum and only money requested for those works which could not be postponed for another year. The passage of the Constitutional Amendment removing the bonds issued for the extension of the water works from consideration in determining the Constitutional debt limit, makes it possible to authorize the issuing of bonds necessary to provide for all the requirements of the system, and it is therefore to be hoped that the future appropriations will allow the full amount requested, and the work of improving and extending the system can be carried on without regard for any consideration other than the efficiency and economy to be obtained in operating the system.

Future Work for Improving and Developing the Supply.

While it is somewhat difficult to accurately estimate the work that is to be done in connection with the water supply for several years in advance, owing to the necessity of modifying or altering plans, due to changes in the administrative offices, it is now possible, however, with a four-year term of office, for the administration to lay out a somewhat comprehensive plan of development with a reasonable degree of certainty that it will be carried out with only minor modifications.

The development for Brooklyn in the way of increasing the supply would be to extend the infiltration galleries or wells so as to have a continuous line from Spring creek to Suffolk County, only omitting the portion of the watershed covered by the larger towns and villages. The development of the shallow underground supply would be supplemented by wells driven below the impervious strata, and in this manner all the available water would be collected and delivered to the borough. This method of developing the supply will give a naturally filtered water, and any surface water which is not utilized under the present development would be purified by slow sand filters, thus giving a supply which would be entirely free from danger of any contamination.

The numerous small pumping stations on the watershed have always been a source of expense to the City, and by adopting central stations with transmission of power to operate the individual galleries or wells it will be possible to do away with the majority of the stations, with a resultant economy to the City in cost of maintenance. It is expected that this development can be fully carried out during the next three years.

After the supply reached the City it would be delivered either directly into the distribution mains or through covered reservoirs, it being proposed to cover the distribution reservoirs as soon as practicable.

The imperative need of additional sources of supply other than those which can be developed in the Counties of Kings, Queens and Nassau has been already stated and the natural advantages of Suffolk County have been shown. The question of utilizing the Suffolk County supply for the additional water that will be required before any supply from up the State will become available is to be legally tested and a judicial determination made of the constitutionality of the law, which apparently prohibits the

City from entering into Suffolk County. As the determination of the constitutionality of this law will unquestionably be a matter of years rather than months, the Department expects to force the issue at the earliest date possible, and studies are being made of the best point at which to erect a pumping station and take the water from Suffolk County so that the law may be tested.

For the distribution system a carefully studied plan is being made showing the exact size of all mains, both trunk and distribution, so that the extension of mains can be made along lines that will insure an ample supply of water for fire and domestic service. It is proposed to extend mains in all sections of the borough and thus promote the development of the borough by providing the supply by the time it is actually required, instead of, as has been done in the past, waiting until the water is needed before any attempt is made to supply this need and to properly protect the citizens from loss by fire. It is planned to replace the more important tuberculated mains by new mains and to clean or replace the old mains in purely residential sections. The reduction in fire losses which has already been shown by the partial remodeling of the old distribution system will naturally result in a lowered fire rate, and Brooklyn, instead of having a high rate, as has been the case in the past, should have and will have an extremely low rate, if the present plans are carried out. The lack of hydrants on those mains which are large enough to supply sufficient water for fire purposes has been a cause of fire losses in the past, and a thorough remodeling of the hydrants, gates and cross connection systems will be made. Brooklyn has many types of fire hydrants in use at present, but a standard type, which represents the most advanced ideas in hydrant construction, has been adopted and used for the past two years, and all hydrants set in the future will be of this type, so that there will be a minimum expenditure necessary for repairs to hydrants and an increase in the efficiency of the system.

The pressure gauges which have been installed in some of the engine houses so as to give a daily record of the conditions in the different sections of the borough will be extended and thus cover the entire distribution system.

The High Pressure Fire Service System, which has proven successful in Coney Island, and which undoubtedly will be an entire success in the other sections of the Borough, will be extended so as to cover all the important business and manufacturing centres.

The work thus planned is one of great magnitude, and, in order to successfully complete it within the next four years, it will require unflagging zeal and devotion to duty on the part of all the employees of the Department, and prompt co-operation on the part of the other Departments of the City. The following list of the works planned will give some idea of their comprehensive character, the total estimated cost being about $25,000,000:

Additional galleries or wells.
Permanent pumping plant for Wantagh.
Permanent pumping plant for Massapequa.
New station at Millburn.
Deep wells.
Additional conduit from Valley stream to Massapequa.
Equipment to consolidate stations.
New trunk mains.
Removing and relaying mains.
Replacing hydrants.
New hydrants.
Cutting in hydrants on existing mains.
Extension of High Pressure Fire Service System.
Two new pipe yards.
Land for conduit line and for protection from pollution.
Fencing property.
Cleaning ponds.
Buildings and machinery for existing pipe and repair yards.
New rising main to Ridgewood Reservoir.
Temporary plant for remodeling Ridgewood.
Extension of distribution.
Cutting in gates and making cross-connections.
Boundary mains for the high service districts.
Force main from Ridgewood engine house to Mt. Prospect tower.
Additional engine for Gravesend.
Covering Mt. Prospect Reservoir.
Development of supply in Suffolk County.
Filters for surface streams.
Covering Ridgewood Reservoirs.
New conduit for Suffolk County supply.
Forest Park Reservoir.

In order to conserve the supply house to house inspections will be made and meters introduced, if it proves practicable to install them. By continuing the use of the Pitot tube or other form of measuring device a systematic study of the flow in the mains, especially along the river front and in the vicinity of large manufacturing centres, will be made. These studies will undoubtedly result in reducing waste at points where it cannot now be detected.

The rules and regulations of the Department have not been drawn so as to fully meet the requirements of the City, and recommendations have been made to change these regulations so as to increase the efficiency in the service and secure to the citizens a better service and a more equitable apportionment of the charges made.

It is difficult to accurately determine at present the exact income of the Department, and it is recommended that the system of bookkeeping be changed so that the gross income and net income of the Department can be determined without making an extended search and compilation of data, as is now necessary. While these matters do not always directly concern the Engineering Bureau, they nevertheless are so intimately related to the work of that Bureau that it is impossible to entirely separate them.

Protection of Supply from Pollution.

A map of some of the lands along Pine's stream and East Meadow stream was forwarded on June 1 and was approved by the Board of Estimate and Apportionment on November 17. This map simply covered those lands which it was deemed most necessary to purchase on Pine's stream and two parcels of land on East Meadow stream, which were flooded when planks were placed on the waste weirs in times of heavy flow. Assuming that we can have all the money necessary to properly extend and improve the system, careful consideration should be given to the question of purchasing land for protection from pollution and a definite course of action adopted and then systematically pursued. Our future supply will be obtained mainly from underground sources, what is now the surface supply being taken either before it reaches the stream or by passing again into the grounds due to the lowering of the water level by the development of the underground supply. Under these circumstances we could either stop purchasing any land to prevent the erection of nuisances and depend upon the natural and artificial filtration of the supply, or we can buy all the land adjoining the streams and prevent the establishment of these nuisances. As the land bought will increase in value, so that it can eventually be disposed of at a price exceeding that paid for it by the City, and as even a filtered supply is more pleasing when derived from practically unpolluted sources, I consider that it would be for the best interests of the City to appropriate an adequate sum of money and buy the land adjoining the streams from which the supply is derived at present, with the possible exception of the Baiseleys and Springfield streams, where the development has been such that the cost would be greater than the value of these streams as sources of supply. Each year that this work is delayed increases the cost of purchasing the land and also increases the pollution of the water. If the land is to be obtained a comparatively large corps of men should be appointed so as to survey and map all the streams and the adjoining land and have a comprehensive proceeding to condemn the land instead of taking it in piecemeal, as has previously been the custom.

Sanitary Inspection and Patrolling of System.

As has previously been stated, our supply is carefully watched both by the Superintendent of Ponds and Reservoirs and his men and by the Chemist in charge of the Mount Prospect Laboratory and the men under his control. Special inspection is made of any condition which may prove to be dangerous to the purity of the supply and probably no supply of a large city is more carefully looked after, from a sanitary standpoint, than the Brooklyn system.

The extension of the system of panning closets along the streams is carried out each year, and the contents of these pans is regularly removed by the City's employees.

Mt. Prospect Laboratory.

The work at the Mt. Prospect Laboratory has included not only analyses for Brooklyn, but also analyses for the other boroughs. For the purpose of regularly analyzing the water supply daily samples are taken from the terminus of the aqueduct at Ridgewood at both the North and South Side Pumping Stations and from the taps at the Laboratory, and at Flushing and Clermont avenues. These samples are examined physically and bacteriologically, and weekly samples are obtained from the distribution reservoirs for complete sanitary analyses. The weekly samples taken from all the surface supplies are examined physically and bacteriologically, while complete analyses are made monthly of these sources. The supplies from the driven well stations showed such slight fluctuation in quality that it is only necessary to make a complete analysis quarterly. The following table gives the amount of work which has been done at the Mt. Prosptct, Jameco and Katonah Laboratories during the year:

Total Samples of Water Analyzed by Laboratories.

Mt. Prospect Laboratory	5,572
Mt. Kisco Laboratory	2,830
Jameco Laboratory	2,699
Total	11,101

Total Samples of Water Analyzed by Boroughs.

Brooklyn	6,145.
Manhattan	3,965
Queens	454
The Bronx	459
Richmond	78
Total number of samples	11,101

Physical examinations	6,771
Complete chemical analyses	1,164
Partial chemical analyses	1,689
Microscopical examinations	2,917
Bacteriological examinations	9,973
Bacteriological tests for bacillus coli	6,958

The following table gives an idea of the general analytical work done during the year:

Cement samples examined	81
Oil samples examined	75
Coal samples examined	46
Sand samples examined	15
Gas samples analyzed	6
Paint samples analyzed	6
Pig lead samples analyzed	5
Boiler compounds analyzed	5
Magnesia asbestos analyzed	3
Potash analyzed	2
Disinfectants analyzed	2
Alum analyzed	1
Mineral analyses	1
Special tests and experiments	50

Weekly reports have been made on the efficiency of the filter plants and on the quality of water received from the Queens County Water Company. Special tests and studies have been made on boiler waters and boiler compounds, on asbestos packing, on various sands for filtration purposes, on the removal of algae and intestinal germs from water supplies by the copper sulphate treatment, and on the heating power of the gas used at the Coney Island Pumping Station.

Monthly inspections have been made of the entire Brooklyn watershed, and, with the co-operation of Mr. Brower, the Superintendent of Ponds and Reservoirs, a considerable number of nuisances have been abated.

The following table gives a comparison of the average quality of the water for 1904 and 1905, from the two influxes at Ridgewood Reservoir and from the taps at the Laboratory and at Flushing and Clermont avenues:

	Ridgewood Influxes.		Tap Waters.	
	1904.	1905.	1904.	1905.
Physical Examination—				
Turbidity	4	4	4	4
Color	14	14	13	13
Per cent. of samples with distinct vegetable odors	1.6	0.0	2.6	0.1
Per cent. of samples with odors of decomposition	1.7	0.4	2.6	0.6
Per cent. of samples with odors due to organisms	0.0	0.0	3.9	0.7
Chemical Examination—				
Albuminoid ammonia	0.057	0.049	0.054	0.061
Free ammonia	0.028	0.021	0.012	0.012
Nitrites	0.003	0.003	0.003	0.003
Nitrates	1.19	1.06	1.10	1.01
Total solids	74.0	69.0	.....	.....
Chlorine	7.9	7.2	.....	.....
Hardness	27.0	26.0	.....	.....
Alkalinity	11.0	11.0	.....	.....
Iron	0.33	0.44	.....	.....
Microscopical Examination—				
Microscopic organisms	76	31	743	1,329
Amorphous matter	233	231	211	234
Bacteriological Examination—				
Bacteria per cc	597	363	542	321
Per cent. of positive tests for B. coli in 0.1 cc	1.7	3.9	1.0	2.2
Per cent. of positive tests for B. coli in 1.0 cc	12.1	17.6	11.0	10.0
Per cent. of positive tests for B. coli in 10.0 cc	26.9	36.3	22.6	27.6

It will be seen from a comparison of the results in the foregoing table that the quality of the water supplied to the Borough of Brooklyn during the year 1905 compares favorably with that delivered during the previous year, except for the presence of larger numbers of B. coli, due probably to shortage in quantity and consequent reduction in the time of storage.

Filter Plants.

The operation of the Filter Plants has been under the direction of Inspector Coffin, and as the work of making the analyses was increased by putting into use the Forest Stream Filter Beds, a Laboratory Assistant was assigned to him on August 1,

and daily analyses are made of the water supplied by all the filter plants. A satisfactory degree of purification has been obtained from both the mechanical and slow filter plants, the results being about the same from the different types of filters. Analyses of sand at the mechanical filters showed that the operation of the filter plants has removed some of the fine material, and it is necessary to take out this sand and mix finer sand with it. The gravel has been found to be badly clogged with muck, and it will be cleaned and the air agitating pipes lowered so as to more effectively clean the gravel in the future. Experiments have been carried on during the year in washing the slow sand filters instead of removing the accumulation of dirt by scraping. After various trials it has been found that the placing of boards in the beds, dividing the beds into longitudinal bays about 20 feet wide, and thus inducing a comparatively high current while the surface was being agitated by rakes, gives the best results. The raw water is admitted from one bed on to the surface of the bed to be cleaned, and the men stir up the surface of the bed, breaking up the fine silt which has collected, and the velocity is sufficient to carry off this silt to the waste pipe. If any of the silt is deposited before it reaches the waste pipe it is again brought into suspension, as the men work from the upper end of the bed toward the waste pipe, and the beds are efficiently cleaned in this manner. At the Forest Stream beds no provision was made for washing the beds when they were originally designed, and a contract was therefore drawn and bids received for installing a 20-inch vitrified drain pipe discharging below the pond and connected to each of the filter beds, the connections being properly gated off. A cross-connecting pipe was placed between the two beds, and this work is now being completed by Isaac Harris, the contractor. As soon as the work is finished the plank will be placed in the beds and the beds washed instead of being scraped.

The cost of washing the Hempstead beds as compared with the cost of scraping is approximately as follows:

Cost of washing, per acre	$25 00
Cost of scraping, per acre	70 00

As the beds are equally as efficient after washing as after scraping, this system would, under the conditions existing on Long Island, seem to be the ideal one for cleaning filter beds, and while I do not know of its adoption at other places, it would seem as if it could be adopted and reduce the cost of maintenance in many cases. The cost of filtering the water is given in Tables Nos. 25, 26, 27 and 28, which show that the cost of filtering water by the slow sand filters is small compared with that for running the mechanical filter plants.

The work of installing additional filters will be postponed until after the development of the underground supply, as on some of the streams the construction of an underground system of development will enable us to utilize all the surface flow, except under flood conditions, without the construction of filter beds. This method of obtaining the filtered water is more desirable than by constructing filter beds, which are dependent upon the efficiency of the employee in charge for the proper purification of the water.

INFILTRATION GALLERIES.

Wantagh.

The contractors commenced work on the Wantagh gallery on April 24, and since that date a continuous supply of water has been pumped from the central well into the conduit for twenty-four hours of each day. The work was not commenced by the contractor until after the question of the right of the City to order them to continue the work had been submitted to the Corporation Counsel, who, in an opinion dated December 27, 1904, held that they were, under the terms of the contract, legally compelled to continue the work. This they did under protest, and the result has been that when orders have been given to the contractors to increase the speed at which the work was done they have claimed that no contract existed, and we have been unable to enforce our orders. Prior to commencing work this year about 1,100 feet of pipe had been laid, and the water pumped from the gallery at first amounted to between 2,500,000 and 3,000,000 gallons daily. As the work progressed the yield increased, until it averaged between 8,000,000 and 9,000,000 gallons daily, and since the work was shut down, on November 17, we have continued receiving this amount of water, the contractors continuing the pumping, although they threatened to stop pumping unless the City agreed to conditions which were not possible. When the threat was made to shut down the plant City men were detailed to the Wantagh Station, so that they could immediately start pumping in case the contractors' employees stopped work, but the contractors have continued pumping steadily, and there will probably be no further trouble in this matter. The pipe laid during the year was as follows:

Pipe Laid.	West Leg.	East Leg.	Total.
	Feet.	Feet.	Feet.
36-inch, vitrified	771.5	618.58	1,390.08
33-inch, vitrified	1,072.33	.....	1,072.33
30-inch, vitrified	1,042.17	34.21	1,076.38
30-inch, cast iron	.....	1,826.38	1,826.38
27-inch, vitrified	319.75	.....	319.75
Total	3,205.75	2,479.17	5,684.92

The pipe remaining to be laid is as follows:

Pipe Laid.	West Leg.	East Leg.	Total.
	Feet.	Feet.	Feet.
30-inch, vitrified	.....	1,610.83	1,610.83
27-inch, vitrified	193.25	528.00	721.25
24-inch, vitrified	1,056.00	528.00	1,584.00
20-inch, vitrified	1,056.00	528.00	1,584.00
Total	2,305.25	3,194.83	5,500.08

The yield from the gallery has been somewhat higher than was conservatively estimated, and there so far has been no reason to doubt our being able to obtain a permanent yield from this gallery fully equal to the estimates previously made. An additional yield can be obtained by sinking deep wells along the line of the gallery and discharging their flow into the gallery by proper connections. We have been able to operate continuously the deep wells at the Wantagh Station, pumping at the rate of about 3,000,000 gallons a day, while the Wantagh Infiltration Gallery was pumping the water from the sands above the clay bed at the rate of between 8,000,000 and 9,000,000 gallons daily. We were therefore obtaining at this point nearly 12,000,000 gallons daily. It is expected to put in and connect new deep wells as soon as the contractors complete their work, these wells being sunk either by contract or by our driven well gangs.

Massapequa.

The contract for the Massapequa gallery was awarded to Mr. M. J. Dady in August, and he was ordered to commence work on September 1, he having already, however, commenced work on August 7. While a large force of men have been employed a comparatively small amount of work has been completed on the gallery itself, the amount laid up to January 1 being 149½ feet of 20-inch vitrified pipe.

In order to provide for the deficiency in the supply due to the non-completion of the Wantagh gallery and the comparatively low rainfall, as already stated, a supplementary agreement was made with Mr. Dady, and a substantial increase in the supply has already been obtained from the temporary stations installed under this agreement. As the agreement called for central sumps to be sunk, from which the supply would be pumped, and did not guarantee the amount to be furnished by these sumps, a contract was entered into with Messrs. Elliot & Marren to sink six of their 18-inch tile wells, each well being guaranteed to deliver 250,000 gallons a minute. Three of these wells have been sunk near Station 26 to a depth of about 40 feet, but they have not yet been placed in service, owing to delays in connecting up the pumps. The yield so far obtained along the line of the Massapequa gallery indicates that a large amount of water will be supplied by the gallery when completed, without utilizing the water from beneath the clay bed. This will be developed by the same system as that proposed along the line of the Wantagh gallery.

Additional Galleries.

Plans and specifications have been prepared for the Watts pond gallery and general plans for two galleries on the watershed west of Rosedale. The 200-foot strip of land which is to be purchased south of the conduit line and the railroad will give sufficient room for the construction of the gallery, as well as the installation of the high pressure pipe conduits. The preparation of the contracts and plans for the additional galleries is being suspended until the studies are completed in regard to the operation of the plants that will furnish the new supply, either by compressed air, electricity or hydraulic pressure, to which reference has been made, and to the possible substitution for the galleries of the tile wells, conveniently grouped, so as to form small units.

Canarsie Station.

The lack of conduit capacity made it imperative that every effort should be exhausted in obtaining a supply which could be delivered prior to the completion of the new conduit line, and a site for a driven well station within the borough limits has been selected south of the Manhattan Beach Railroad, between Eighty-sixth and Ninety-second streets. The test wells sunk in this vicinity showed that to a depth of 200 feet the sand was of good quality for a driven well station, but did not indicate that there was any clay bed from below which an additional supply could be drawn. The test wells will, however, be carried to a greater depth to determine conclusively whether such clay bed does exist.

A map covering the land to be acquired for the station was forwarded on November 11 and the contracts for the station were forwarded as follows:

Engines, on October 27, 1905.
Boilers, on Octber 27, 1905.
Building, on October 26, 1905.
Steamfitting, on October 27, 1905.

The wells are to be put in by our men and the castings necessary are to be furnished under a contract for which bids were received on December 27. It is estimated that this station will yield 6,000,000 gallons daily, which will be pumped directly into the distribution system.

Even though the life of this station be assumed as a short one, on account of the comparatively rapid development of the surrounding country and the reduction thereby in the water which will reach the station, the cost of water per million gallons delivered is very low, as there are no expensive conduits and reservoirs to maintain, the water being pumped directly into the distribution system. The location of the station is such that it can utilize all the water passing down to the Bay through Canarsie, between Fresh creek and Paerdegat creek.

Emergency Work.

As has already been stated, appropriations were obtained for emergency work to increase the supply, and sites on the conduit lands at culverts D, L and N were chosen for driven well stations, which it was expected would be kept in operation for a year or more.

At Station D a contract was made with J. B. McCord of No. 29 Broadway to put in fifteen 6-inch wells surrounded by gravel at the cost of the work plus 15 per cent. for profit on the labor and 20 per cent. profit on the material. The contracts for the machinery, steamfitting, etc., were as follows:

Contract for two 3,000,000-gallon centrifugal pumps, made with B. Franklin Hart, Jr., & Co. for $1,320.

Contract for two 100-horse power locomotive boilers, with B. Franklin Hart, Jr., & Co. for $1,683.

Contract for steamfitting, with E. Rutzler Company for $659.

Contract for a portable house, with Springfield Moulding Works for $275.

Contract with the Borough Construction Company for delivering and setting the boilers for $1,250.

Contract with Frank J. Gallagher for hauling, laying and testing the suction mains for $760.25.

The erection of the engine and boiler house is to be done by our men, as well as the building of the weir and making the connection from the pumps to the weir box and from the weir box to the brick conduit.

Work was commenced on sinking the wells on December 11, and up to January 1 five wells have been completed. It is expected that all the machinery will be delivered, set up and ready to run before February 15.

The total cost of this station, including the time of the City's men, is estimated at $13,000.

At Station L the work of putting in the wells was carried on by two of our driven well gangs, and the men worked for twelve hours daily so as to complete this station as soon as possible. The sinking of the wells was commenced on November 13 and on December 2 water was first delivered into the conduit from this station, at which time seven wells had been completed. The work of driving the wells was continued until twenty wells had been sunk, these wells consisting of a 6-inch casing with a strainer made up either of two lengths of galvanized iron, perforated pipe, surrounded by slotted brass, or of a cluster of three sets of 2-inch points made up of 5-foot lengths; this cluster system was adopted on account of the lack of material and the fact that we had a large number of new 2-inch points in stock, which otherwise would not probably have been used. At the time the station was first put into service the condition of the supply was critical and no effort was spared to deliver water in the shortest possible time. To do this two small centrifugal pumps were purchased from Wickes Brothers, at a cost of $398 each, and an order was given to the Baldwin Engineering Company to connect up the boilers and pumps on a percentage basis. The steamfitters worked day and night, and by working in this manner the station was started several days earlier than would otherwise have been possible. Doing the work in this manner, however, was decidedly uneconomical and the cost of installing the machinery at this station was therefore much greater than at the other stations. The contracts made for boilers, pumps, etc., were as follows:

Contract for two temporary centrifugal pumps, with Wickes Brothers for $796.

Contract for two permanent 3,000,000-gallon centrifugal pumps, with Donegan & Swift for $1,500.

Contract for two 100-horse power locomotive boilers, with Donegan & Swift for $1,786.

Contract with the Borough Construction Company for hauling and setting two temporary pumps for $165 each.

Contract with the Borough Construction Company for hauling and setting two permanent pumps for $240 each.

Contract with the Borough Construction Company for hauling and setting two boilers for $925 each.

Contract with Mershon & Morley for portable house for $270.83.

The pipe used for the suction main was hauled by Isaac Harris under a requisition at a cost of about $180, and the laying of the pipe and connecting up of the wells was done by our men. Our men also built the boiler and engine house.

The estimated cost of this station, including all labor and material furnished by the City, but exclusive of the land, was $13,000.

At Station N the sinking of the wells is being done by the Borough Construction Company under the same contract as was made with J. B. McCord for station D. The contracts for the pumping plant were as follows:

Contract for two 3,000,000-gallon centrifugal pumps, with Buffalo Forge Company, $1,410.

Contract for two 100 horsepower locomotive boilers, with Jas. Beggs & Co., for $1,730.

Contract for steamfitting, with American General Engineering Company, for $699.

Contract for hauling, laying and testing suction mains, with Frank J. Gallagher, for $760.25.

Contract for portable house, with Springfield Moulding Works, for $275.

The building of the engine and boiler house, wier box, connection to conduit and connection from the engines to the weir box is to be done by our men.

The sinking of the wells was commenced on December 11, and there are to be twenty 6-inch wells at this station. Up to January 1 seven wells have been completed.

In making contracts for these stations, they were made in the form of regular requisitions, the charges in all cases where the amounts exceeded $1,000 being made against the resolution of the Board of Aldermen, adopted on December 19, allowing $20,000 to be spent for emergency work, and on December 26, allowing $30,000 to be spent for emergency work on the three stations.

In addition to these stations, effort was made to put to work all the contractors who were equipped for sinking wells, and a requisition was issued to F. W. Miller to sink six 6-inch wells at the Gravesend Station, at a cost of $9 per foot for the well complete,

For a temporary plant at New Lots requisitions were issued to P. J. Donohue & Sons to fit up the vertical boiler formerly used in the dynamo room of the South Side Ridgewood Station, at a cost of $625, and to Wickes Brothers for one Worthington pump and one Snow pump, the cost of these two pumps being $1,500. The setting up and connecting of this temporary plant at New Lots will be done by our men.

At the Jameco Station the contract was given to C. A. Lockwood, of Jamaica, to sink four 8-inch vitrified tile wells, at a cost of $16 per foot. All of these wells have been completed and they are being connected up to the suction main of the deep well plant.

As the deep wells at the Jameco plant had fallen off so that the yield was only about one-third of the former yield, negotiations were entered into with S. W. Titus to make a test of the yield of the deep well strata by utilizing the air lift. Under the terms of the contract as signed by the Commissioner on December 29, the contractor is to be paid $40 per million gallons for all the water delivered over and above the present yield of the deep wells, this contract to continue for a period of four months after the deep wells have been overhauled, and the City is given the option of continuing the contract for a further period of two years at a rate of $30 per million gallons. There has been in the past so much discussion and so many statements made as to an inexhaustible supply from beneath the clay, that this contract was deemed advisable, even though the price paid was somewhat greater than it would have cost the City to develop the supply, and also on account of the greater rapidity with which the supply could be made available. The claim that there is an inexhaustible supply under the clay bed is considered entirely erroneous by all geologists and engineers conversant with the conditions on Long Island, but that a greater supply can be obtained from beneath the clay bed than is at present obtained by the City is not and has not been denied. The same danger exists from the infiltration of salt water when pumping water from beneath the clay bed as exists when pumping the water from above the clay bed, and the amount to be obtained from the deep well sources is dependent entirely upon the daily flow through the sands and gravels beneath the clay, and while this amount is considerable, it is not enough to warrant the exaggerated estimates of the same so often published. Whatever water passes under the clay bed must have fallen on Long Island and has probably fallen to the south of the water divide, and in most parts of the island this is certainly so. It is therefore useless to expect a greater supply from the sands above and below the clay bed than could be obtained from the rainfall on the island, after making due deduction for evaporation and the needs of vegetation.

A contract was made with the Borough Construction Company to put up a temporary pumping plant at the Hempstead storage reservoir within six days after the order was given to commence the erection, the cost of putting up the plant to be $1,160, and the City to pay $350 for the removal of the plant, the City also to pay for the rental of the plant at the rate of $25 per day for the first month, $22.50 per day for the second month, and $15 per day for any period extending beyond two months. The contractor was also to be paid $22.50 per day for furnishing the necessary men and material, other than coal, to operate the plant, the City being given the right to operate the plant with its own men, if it so desired. With the conditions of extreme stringency in the water supply existing in the middle of November, it was deemed advisable to give orders to have this plant erected, and an order was issued on November 17 to erect the plant. The contractors completed their work within the six days, so that the plant could have been run had it been necessary. It was not necessary, however, to start the plant for a couple of days, the water first being pumped into the conduit on November 26. This pumping only continued for three days, the rain coming to our relief at that time. The water in the reservoir again fell on December 20 so that the plant was started, and again the rainfall made it unnecessary to continue the operation of the plant more than a few hours. From that time on the plant was not run, except to test it for capacity, and at the end of December the contractors were ordered to remove their men. It is expected to order the removal of this plant during January, if the condition of the supply warrants. Had the rainfall not come at the time it did, this plant might have tided us over during the time that the other emergency plants were being constructed and prevented the reduction in pressure, and I consider that the construction of the plant was, therefore, advisable, even though actually it was not used except for a very limited period.

At Massapequa, Mr. M. J. Dady, the contractor, entered into a supplementary agreement to install temporary pumping stations, as already referred to, and to supplement the supply to be obtained from the sumps to be constructed by him, an agreement was made with Elliott & Marren for six 18-inch tile wells to be sunk at points to be designated by the Engineer, each well to yield not less than 250,000 gallons per minute. Three of these wells have been sunk near station 26 and other wells are to be sunk near station 39. The contractors claim that these wells are far superior to the wells put in by the Department and the placing of these wells will enable us to test the accuracy of the statement made by them. The operation of the temporary station at Massapequa was to be at the City's expense, except when the stations were being used for the contractor's work, and a form of agreement has been forwarded, the contractor agreeing to run the plants for $15 a day for labor and $15 a day for coal and other supplies, the City being allowed to furnish the coal, if it so desires, and a reduction to be made of $12 per day from the cost for pumping.

Law Suits for Alleged Diversion of Water.

A number of cases have come to trial during the year where damage was claimed by the owners of property on account of the City's pumping stations diverting the underground supply of waters. Several large judgments have been entered against the City, but this Bureau has not been called upon to give any testimony other than that shown by the records, the question being mainly one of damages and not one of engineering. The damages awarded in some of the cases seemed excessive and I believe they were to be appealed by the Law Department.

Tables.

The tables attached are as follows:

No. 1—Showing monthly record of rainfall at Brooklyn and vicinity, from 1896 to 1906.

No. 2—Showing monthly record of rainfall at Hempstead Storage Reservoir from 1896 to 1906.

No. 3—Showing daily record of rainfall at Brooklyn and vicinity during 1905.

No. 4—Showing daily record of rainfall at Hempstead Storage Reservoir during 1905.

No. 5—Showing the highest, lowest, monthly range of and average temperatures (degrees Fahrenheit) for ten years between 8 and 9 a. m. at Hempstead Storage Reservoir.

No. 6—Showing average daily consumption of water in Brooklyn for each month during 1905.

No. 7—Showing average daily consumption of water in Brooklyn from 1896 to 1905.

No. 8—Showing average, maximum and minimum daily consumption of water during 1905.

No. 9—Showing ratio of the average daily consumption of water for each month to that for the year, from 1896 to 1905.

No. 10—Showing average depth and corresponding quantity of water in Ridgewood, Mt. Prospect, New Lots and Hempstead Storage Reservoirs.

No. 11—Showing the total monthly and average daily pumping at Ridgewood for the year 1905, rainfall for each month, and proportion of the rainfall corresponding to the pumping.

No. 12—Showing the amount of water delivered at the Ridgewood Pumping Station from each source during 1905.

No. 13—Showing water mains laid and removed, and gates and hydrants set and removed, to December 31, 1905.

No. 14—Showing high pressure fire service mains laid, and gates and hydrants set, to December 31, 1905.

No. 15—Showing water mains laid, gates and hydrants set during the year 1897.

No. 16—Showing water mains laid, gates and hydrants set during the year 1898.

No. 17—Showing water mains laid, gates and hydrants set during the year 1899.

No. 18—Showing water mains laid, gates and hydrants set during the year 1900.

No. 19—Showing water mains laid, gates and hydrants set during the year 1901.

No. 20—Showing water mains laid, gates and hydrants set during the year 1902.

No. 21—Showing water mains laid, gates and hydrants set during the year 1903.

No. 22—Showing water mains laid, gates and hydrants set during the year 1904.

No. 23—Showing water mains laid, gates and hydrants set during the year 1905.

No. 24—Showing high pressure fire service mains laid and gates and hydrants set during the year 1905.

No. 25—Showing net amount of water filtered at the Baiseleys filter plant, and cost of filtration per million gallons.

No. 26—Showing net amount of water filtered at the Springfield filter plant, and cost of filtration per million gallons.

No. 27—Showing net amount of water filtered at the Hempstead filter beds, and cost of filtration per million gallons.

No. 28—Showing net amount of water filtered at the Forest Stream filter beds, and cost of filtration per million gallons.

No. 29—Showing average quality of the water from the two Ridgewood reservoirs during 1904 and 1905.

No. 30—Showing average quality of the water from the taps at the laboratory, from Flushing and Clermont avenues and from Flatbush avenue, for the years 1904 and 1905.

No. 31—Showing results of brake horse power and gas consumption test of the gas engines at the Coney Island high pressure fire service station.

No. 32—Showing results of combined capacity test of the gas engines at the Coney Island high pressure fire service station.

No. 33—Showing results of tests of high pressure fire service mains.

These cover only a summary of the more important work of the Department, and a large number of tables, giving the pumping records and other data, are omitted on account of lack of clerical force to compile these tables, both at the office and at the Ridgewood engine house. While the tables are of little or no interest to our citizens in general, they are important as a matter of record and should be published. This was always done under the City of Brooklyn, and it is to be regretted that the publication of these tables has been discontinued under the greater city.

The tables giving the streets in which mains have been laid during the year were previously included in our annual reports, but were discontinued because these tables were not printed and largely added also to the bulk of the report. We have found, however, that the omission is objectionable, since these tables are of value to the underwriters in ascertaining the improvements made for fire protection, and also for a permanent record for reference. We, therefore, give here such a table, supplementing it by those omitted in former reports, and shall continue the insertion hereafter.

Records.

While the data are available to compile accurate records of all work done by this Bureau, we nevertheless have been unable to make up the records in such shape that they can be readily accessible on account of the lack of clerical force. This condition should be remedied immediately, as the longer the delay in the appointment of the necessary men, the greater will be the difficulty in bringing the records up to date. The more important records are kept up by our engineering force, but many have to be slighted to take care of the more pressing duties of supervising and carrying out contracts for improving and extending the system.

Office Room.

Attention has frequently been called to the entire inadequacy of the space available in the Municipal Building for the work of this Bureau, so that comparatively little more can be said on the subject. We have obtained a slight increase in room for the Engineer's office by reducing the space allotted to the Permit Clerks, but a simple inspection of the way the men are crowded together and the scattering of the files for maps, reports and other important records, would furnish the strongest testimony of the imperative need of a space at least twice that of our present quarters. We have nearly 4,000 maps on file and nearly 10,000 Inspectors' reports, without counting miscellaneous reports and records. All the maps, reports and other records should be placed in the one room, under the care of a Clerk, whose only duty would be to see that they were properly entered and an entry kept of the data when any record or map was given out. This Clerk would also have charge of the blue prints, and the electric blue printing frame could be placed in the same room, so that the tracings for printing need not be removed from the care of the Clerk in charge.

To avoid the incalculable loss that would come from a destruction of our maps by fire, we have had a complete set of blue prints finished and filed at the Ridgewood Engine House, so that in case of destruction of the tracings we would have the prints from which new tracings could be prepared at an extremely small fraction of the cost that would be necessary to prepare new plans, which, in the majority of cases, would be impossible, as the data would not be available.

Office Force.

A simple glance at this report will show the extraordinary amount of work done by this Bureau to improve and extend the supply, far exceeding that of former years. The force at the office, however, has by no means kept pace with the amount of work to be done, and as a consequence our men, although uniformly working far beyond official hours, could not and cannot handle the work as efficiently as if a more adequate distribution of work could be made. In fact, were it not for the absolute competence, exceptional efficiency and unflagging devotion to work of my Assistant Engineers, which I cannot commend too highly, and for the co-operation of the rest of the force, it would have been impracticable to have accomplished the results herein detailed. We imperatively need an increase in the force, and we also need an increase in the pay of our Assistant Engineers, whose salaries, I regret to say, are not only utterly inadequate to the service they render, but compare most unfavorably and unjustly with those received by similar employees in other departments of the City. The exacting duties of our Assistant Engineers in providing for an adequate supply under existing conditions, and the public clamor uniformly and, to a certain extent, naturally directed against this Bureau in case of any shortage or deficiency, impose on them a much heavier burden of responsibility than that of the Engineers in other bureaus of the City.

Yours respectfully,

I. M. DE VARONA, Chief Engineer.

IV. a.

TABLE No. 1.

Monthly Record of Rainfall at Brooklyn and Vicinity from 1896 to 1906.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.	Remarks.
1896	0.98	5.85	5.61	1.40	2.19	6.24	5.29	2.05	3.91	1.73	2.70	1.56	39.51	Record taken, Municipal Building, Brooklyn.
1897	3.16	2.67	2.53	3.10	6.04	2.68	10.00	3.37	1.55	0.94	4.88	4.64	45.56	Record taken, Municipal Building, Brooklyn.
1898	3.96	4.73	2.98	3.24	6.03	1.57	4.82	3.41	2.02	5.75	6.52	2.93	47.96	Record taken, Municipal Building, Brooklyn.
1899	3.73	3.74	6.13	1.65	1.14	2.34	7.08	4.48	6.13	2.07	1.64	1.98	42.11	Record taken, Municipal Building, Brooklyn.
1900	4.00	5.33	3.74	1.88	4.66	3.07	5.14	2.33	3.05	3.42	4.58	1.91	43.11	Record taken, Municipal Building, Brooklyn.
1901	2.16	0.55	4.22	6.33	7.03	0.99	7.16	6.27	2.16	3.03	1.18	6.90	47.98	Record taken, Municipal Building, Brooklyn.
1902	2.50	6.02	4.31	3.39	1.20	5.87	2.69	3.68	4.19	6.49	1.69	6.44	48.47	Record taken, Municipal Building, Brooklyn.
1903	3.64	3.84	4.18	3.19	0.44	8.76	3.46	6.36	2.77	12.02	1.07	2.76	52.49	Record taken, Municipal Building, Brooklyn.
1904	3.20	2.19	3.54	4.74	2.01	2.61	5.40	8.76	3.36	3.54	2.47	2.59	44.41	Record taken, Municipal Building, Brooklyn.
1905	3.24	2.64	3.85	2.61	0.83	4.92	3.97	5.40	7.17	2.61	1.69	3.49	42.42	Record taken, Municipal Building, Brooklyn.

TABLE No. 2.

Monthly Record of Rainfall at Hempstead Storage Reservoir from 1896 to 1906.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1896	1.10	7.04	4.62	1.42	3.04	5.90	3.25	3.29	3.55	1.76	2.91	0.94	38.82
1897	2.27	2.74	3.11	3.33	4.64	3.17	11.68	2.62	1.51	1.51	5.00	4.83	46.41
1898	4.12	3.23	3.45	3.39	8.99	0.77	5.43	4.83	2.44	5.81	6.00	2.36	51.22
1899	4.22	5.02	7.79	1.47	1.79	2.21	5.07	3.59	5.17	2.76	2.69	1.82	43.60
1900	4.45	5.04	3.77	1.87	4.11	1.98	4.69	3.76	2.10	3.22	4.16	2.28	41.43
1901	2.21	0.77	6.97	8.05	7.17	0.55	5.93	4.03	3.36	1.95	1.28	7.65	49.92
1902	2.17	4.99	5.01	3.62	1.01	6.03	2.42	3.34	5.54	8.68	2.13	7.04	51.98
1903	3.82	4.65	5.21	3.98	0.40	9.58	3.16	7.67	2.05	6.65	1.54	3.43	52.14
1904	2.97	3.56	3.58	4.24	2.44	3.77	5.03	10.76	4.58	3.38	1.87	2.44	48.62
1905	2.20	3.00	4.05	3.18	1.07	3.41	2.33	4.54	4.51	2.86	1.81	3.86	36.82

TABLE No. 3.

Daily Record of Rainfall, Brooklyn and Vicinity, During 1905.

Day.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
First	....	....	....	....	....	0.05	0.12	0.02	....	....	....	....	0.19
Second	....	....	....	....	....	0.50	0.15	....	0.15	0.04	....	0.06	0.90
Third	0.19	....	....	....	....	....	....	....	3.35	0.06	0.03	0.60	4.23
Fourth	0.18	....	0.23	0.47	....	....	....	....	0.99	....	....	....	1.87
Fifth	....	0.10	....	1.03	....	....	....	....	....	....	....	....	1.13
Sixth	0.53	1.10	....	0.18	....	0.39	....	0.30	....	....	0.09	....	2.59
Seventh	0.78	....	0.15	....	....	0.81	....	....	....	....	....	....	1.74
Eighth	....	....	0.31	....	....	....	0.22	0.27	....	....	....	....	0.80
Ninth	....	0.66	0.51	....	....	....	....	0.08	....	....	....	0.29	1.54
Tenth	....	....	0.05	0.01	....	....	0.45	0.05	....	....	....	0.27	0.83
Eleventh	....	....	....	....	....	....	0.12	....	1.81	0.75	....	....	2.68
Twelfth	0.61	0.63	....	....	0.02	2.23	....	0.08	0.07	....	....	....	3.64
Thirteenth	....	....	....	....	0.19	....	0.07	1.09	....	....	....	....	1.35
Fourteenth	....	....	....	0.15	0.10	....	....	....	....	....	....	....	0.25
Fifteenth	....	....	....	....	0.13	....	....	1.41	....	....	0.05	....	1.59
Sixteenth	....	....	....	....	0.07	....	....	0.27	....	....	....	....	0.34
Seventeenth	....	....	....	....	....	....	....	....	0.10	....	....	....	0.10
Eighteenth	....	....	0.19	....	0.18	....	....	....	0.51	0.02	....	....	0.90
Nineteenth	....	....	0.19	....	....	....	0.05	....	0.06	0.44	....	....	0.74
Twentieth	....	0.12	0.08	0.08	....	0.13	....	....	0.13	1.14	....	0.02	1.70
Twenty-first	....	0.03	1.24	0.17	....	0.22	....	....	....	....	....	1.37	3.03
Twenty-second	....	....	....	....	....	0.52	....	....	....	....	....	....	0.52
Twenty-third	....	....	....	....	....	....	0.55	....	....	....	....	0.11	0.66
Twenty-fourth	0.17	....	0.17	....	....	0.05	....	0.20	....	0.03	....	....	0.62
Twenty-fifth	0.78	....	0.48	....	....	....	....	1.36	....	0.13	....	....	2.75
Twenty-sixth	....	....	0.07	0.11	....	....	....	....	....	....	....	....	0.18
Twenty-seventh	....	....	0.16	0.40	....	0.02	....	....	....	....	....	....	0.58
Twenty-eighth	....	....	....	....	....	....	....	....	....	....	0.64	....	0.64
Twenty-ninth	....	....	....	0.01	....	....	0.02	0.20	....	....	0.88	0.77	1.88
Thirtieth	....	....	0.02	....	....	....	1.54	0.07	....	....	....	....	1.63
Thirty-first	....	....	....	....	0.14	....	0.68	....	....	....	....	....	0.82
Total.....	3.24	2.64	3.85	2.61	0.83	4.92	3.97	5.40	7.17	2.61	1.69	3.49	42.42

TABLE No. 4.

Daily Record of Rainfall at Hempstead Storage Reservoir During 1905.

Day.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
First	....	0.03	....	....	....	0.18	0.06	0.12	....	....	....	....	0.39
Second	....	....	....	....	....	0.20	0.11	....	0.05	....	....	....	0.36
Third	0.14	....	....	....	....	....	....	....	1.06	0.10	0.17	1.26	2.73

Day.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Fourth	0.05	....	0.18	0.77	....	....	....	....	1.21	....	....	....	2.21
Fifth	....	0.11	....	0.33	....	....	....	....	0.56	....	....	....	1.00
Sixth	0.34	1.11	....	0.75	....	0.70	....	....	....	....	0.10	....	3.00
Seventh	0.94	....	0.17	....	....	0.58	....	....	....	....	....	....	1.69
Eighth	....	....	0.37	....	....	0.01	....	0.04	....	....	0.02	....	0.44
Ninth	....	0.77	0.44	....	....	....	....	0.77	....	....	....	....	1.98
Tenth	....	....	0.09	0.16	....	....	....	0.14	....	....	....	0.62	1.01
Eleventh	....	....	....	0.15	....	....	0.02	0.01	0.02	....	....	....	0.20
Twelfth	0.66	0.84	....	0.22	0.43	0.67	....	0.08	0.68	0.57	....	....	4.15
Thirteenth	....	....	....	....	0.16	....	0.09	0.67	....	....	....	....	0.92
Fourteenth	....	....	....	0.06	0.13	....	....	....	....	....	....	....	0.19
Fifteenth	....	....	....	....	0.09	....	0.02	1.56	....	....	....	....	1.67
Sixteenth	....	....	....	....	0.07	....	....	0.08	....	....	0.03	....	0.18
Seventeenth	....	....	....	....	....	....	....	....	....	....	....	....	0.00
Eighteenth	....	....	....	....	0.09	....	....	....	0.22	....	....	....	0.31
Nineteenth	....	....	0.41	....	....	0.26	0.01	....	0.33	0.01	....	....	1.02
Twentieth	....	0.14	0.01	0.05	....	0.04	....	....	....	1.57	....	....	1.81
Twenty-first	....	....	1.21	0.30	....	0.17	....	....	0.38	0.45	....	1.08	3.59
Twenty-second	....	....	....	....	....	0.52	....	....	....	....	....	....	0.52
Twenty-third	....	....	....	....	....	0.01	0.87	....	....	....	....	0.12	1.00
Twenty-fourth	0.03	....	0.21	....	....	0.03	....	0.03	....	....	0.04	....	0.34
Twenty-fifth	0.04	....	0.61	....	....	....	....	0.44	....	0.04	....	....	1.13
Twenty-sixth	....	....	0.08	0.10	....	....	....	....	....	0.12	....	....	0.30
Twenty-seventh	....	....	0.23	0.06	....	0.04	....	0.03	....	....	....	....	0.36
Twenty-eighth	....	....	....	....	0.10	....	....	....	....	....	0.52	....	0.62
Twenty-ninth	....	....	....	0.23	....	....	0.04	0.14	....	....	0.93	0.78	2.12
Thirtieth	....	....	0.04	....	....	....	0.92	0.43	....	....	....	....	1.39
Thirty-first	....	....	....	....	....	....	0.19	....	....	....	....	....	0.19
Total	2.20	3.00	4.05	3.18	1.07	3.41	2.33	4.54	4.51	2.86	1.81	3.86	36.82

TABLE No. 5.

Highest, Lowest, Monthly Range of and Average Temperature (Degrees Fahrenheit) for Ten Years, Between 8 and 9 o'clock a. m., at Hempstead Storage Reservoir.

Year.	January.				February.				March.			
	Highest.	Lowest.	Range.	Average.	Highest.	Lowest.	Range.	Average.	Highest.	Lowest.	Range.	Average.
1896	38	0	38	23	47	—1	48	27	43	17	26	29
1897	44	8	36	25	40	8	32	27	49	19	30	35
1898	49	2	47	29	42	4	38	28	55	26	29	40
1899	47	3	44	26	42	—5	47	23	47	24	23	36
1900	54	12	42	29	51	5	46	27	45	16	29	31
1901	40	5	35	29	35	11	24	21	52	12	40	35
1902	41	14	27	25	44	11	33	25	52	25	27	40
1903	48	10	38	27	49	2	47	28	52	29	23	43
1904	45	—6	51	19	42	0	42	18	49	17	32	34
1905	46	0	46	23	34	2	32	20	48	16	32	34
	45	5	40	25	43	4	39	24	49	20	29	36

Year.	April.				May.				June.			
	Highest.	Lowest.	Range.	Average.	Highest.	Lowest.	Range.	Average.	Highest.	Lowest.	Range.	Average.
1896	70	28	42	47	77	46	31	61	76	55	21	64
1897	58	28	30	45	68	48	20	56	72	52	20	62
1898	56	30	26	45	68	44	24	56	75	57	18	67
1899	63	32	31	46	72	52	20	59	85	63	22	70
1900	60	30	30	47	72	43	29	58	80	59	21	69
1901	54	39	15	46	70	40	30	57	87	55	32	70
1902	60	38	22	48	70	45	25	59	76	62	14	67
1903	64	32	32	49	75	45	30	60	74	56	18	63
1904	55	28	27	44	72	52	20	61	84	55	29	68
1905	59	36	23	45	68	44	24	58	78	51	27	66
	60	32	28	46	72	46	26	58	79	56	23	67

Year.	July.				August.				September.			
	Highest.	Lowest.	Range.	Average.	Highest.	Lowest.	Range.	Average.	Highest.	Lowest.	Range.	Average.
1896	84	64	20	72	80	59	21	69	71	45	26	61
1897	76	62	14	70	75	61	14	68	75	45	30	61
1898	80	60	20	72	79	63	16	71	78	53	25	65
1899	80	65	15	71	77	63	14	69	73	48	25	63
1900	85	61	24	74	84	65	19	74	79	52	27	68
1901	94	64	30	75	78	67	11	73	77	55	22	66

Year.	July.				August.				September.			
	Highest.	Lowest.	Range.	Average.	Highest.	Lowest.	Range.	Average.	Highest.	Lowest.	Range.	Average.
1902	81	62	19	71	77	64	13	71	73	53	20	65
1903	84	65	19	74	77	60	17	68	74	44	30	62
1904	80	66	14	72	76	60	16	70	74	44	30	63
1905	85	58	27	74	78	60	18	69	70	49	21	63
	83	63	20	72	78	62	16	70	74	49	25	64

Year.	October				November.				December.			
	Highest.	Lowest.	Range.	Average.	Highest.	Lowest.	Range.	Average.	Highest.	Lowest.	Range.	Average.
1896	61	35	26	45	58	28	30	44	46	5	41	27
1897	66	32	34	50	60	21	39	41	49	10	39	31
1898	71	40	31	55	56	23	33	39	48	8	40	31
1899	67	38	29	55	62	25	37	41	56	8	48	33
1900	69	42	27	57	65	22	43	45	46	12	34	30
1901	66	43	23	54	55	20	35	37	53	10	43	31
1902	66	40	26	56	60	30	30	48	48	8	40	29
1903	68	42	26	54	52	16	36	36	48	10	38	26
1904	67	33	34	51	46	20	26	37	45	9	36	25
1905	69	38	31	52	54	21	33	37	54	16	38	32
	67	38	29	53	57	23	34	40	49	10	39	29

Year.	Year.			
	Highest.	Lowest.	Range.	Average.
1896	84	—1	85	47
1897	76	8	68	48
1898	80	2	78	50
1899	85	—5	90	49
1900	85	5	80	51
1901	94	5	89	50
1902	81	8	73	58
1903	84	6	78	50
1904	84	—6	90	47
1905	85	0	85	48
	84	2	82	50

TABLE No. 6.

Summary of Average Daily Consumption of Water in Brooklyn for Each Month During 1905.

Month.	Ridgewood and Mt. Prospect Low Services.	Mt. Prospect High Service.	Gravesend.	New Utrecht.	New Lots.	Total.
January	109,519,028	4,504,129	2,847,071	1,954,381	4,412,587	123,237,196
February	115,899,924	4,384,571	2,863,718	1,975,250	4,392,479	129,515,942
March	110,171,310	4,545,435	2,720,981	1,915,632	4,248,355	123,601,713
April	104,508,674	4,950,556	2,718,507	1,614,027	4,057,840	117,849,604
May	107,986,596	4,978,468	2,919,539	1,257,219	4,335,939	121,477,761
June	106,230,369	5,060,267	2,953,639	1,888,809	4,209,976	120,343,060
July	104,287,558	4,582,913	3,266,684	1,937,990	4,266,674	118,341,819
August	101,247,567	4,084,806	3,174,974	1,936,003	4,271,436	114,714,786
September	100,233,345	4,485,633	3,146,200	1,976,466	4,149,603	113,991,247
October	101,900,655	4,436,484	2,855,000	1,931,000	4,199,000	115,322,139
November	100,412,544	4,401,600	2,955,000	2,021,000	4,239,000	114,029,144
December	105,256,196	4,576,129	2,996,000	2,005,000	4,220,000	119,053,325
Average for year	105,584,034	4,582,655	2,952,250	1,866,759	4,249,270	119,234,968

TABLE No. 7.

Average Daily Consumption of Water from 1896 to 1905, U. S. Gallons.

Month.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
January	85,301,126	88,508,491	92,738,576	96,502,152	92,021,990	97,331,371	101,891,184	107,828,904	116,463,845	123,237,196
February	85,010,327	87,524,651	93,636,874	102,822,950	93,875,485	93,739,375	103,879,545	108,589,023	128,156,893	129,515,942
March	84,149,980	86,648,501	90,732,567	95,112,986	94,378,811	92,016,696	99,806,437	105,100,729	114,487,613	123,601,713
April	81,844,825	87,657,203	89,665,471	94,003,531	91,877,708	93,721,383	99,847,690	103,025,471	106,631,005	117,849,604
May	82,140,592	87,198,335	90,734,731	96,835,982	96,114,581	95,057,314	101,170,927	104,753,479	106,506,897	121,477,761
June	82,126,604	90,882,138	96,653,019	99,850,034	99,542,241	101,784,528	102,174,855	100,690,550	109,029,548	120,343,060
July	83,811,569	92,439,865	95,367,904	97,763,355	99,681,945	101,202,273	99,747,124	105,159,017	108,449,827	118,341,819
August	85,131,354	92,686,144	96,547,558	97,172,481	98,384,748	97,249,230	97,719,661	102,009,011	110,330,125	114,714,786
September	84,898,033	96,139,765	98,934,202	96,574,665	94,894,169	97,011,649	100,325,147	108,114,334	113,196,405	113,991,247
October	83,336,763	93,863,740	94,201,585	93,787,252	88,790,469	97,687,658	98,984,798	103,691,807	112,678,795	115,322,139
November	82,412,045	89,749,903	90,269,822	90,549,242	87,047,378	95,447,760	96,363,843	99,617,300	112,930,626	114,029,144
December	86,216,980	89,353,350	93,324,553	89,959,154	93,809,556	98,124,421	102,019,521	108,518,204	119,548,389	119,053,325
Average	83,870,175	90,233,457	93,563,231	95,863,571	95,605,721	96,720,603	100,305,485	104,747,447	113,149,117	119,234,968

Gravesend system, acquired 1895; pumping about, U. S. gallons per day..... 2,000,000
New Utrecht system, acquired 1895; pumping about, U. S. gallons per day.... 1,000,000
New Lots system, acquired 1900; pumping about, U. S. gallons per day..... 3,500,000

TABLE No. 8.

Average Maximum and Minimum Daily Consumption of Water, 1905.

1905.	Average United States Gallons.	Maximum. Date.	Maximum. United States Gallons.	Minimum. Date.	Minimum. United States Gallons.
January	123,237,196	Thursday, 26	133,806,328	Sunday, 1	112,051,504
February	129,515,942	Tuesday, 14	138,144,292	Sunday, 12	120,402,128
March	123,601,713	Wednesday, 1	129,613,100	Sunday, 19	114,657,556
April	117,849,604	Monday, 3	125,454,284	Sunday, 23	107,688,044
May	121,477,761	Monday, 29	121,714,316	Sunday, 21	112,125,140
June	120,343,060	Monday, 26	127,655,284	Sunday, 4	112,000,212
July	118,341,819	Friday, 14	131,933,916	Sunday, 30	104,823,672
August	114,714,786	Tuesday, 8	122,085,724	Sunday, 27	104,611,880
September	113,991,247	Tuesday, 5	121,868,520	Sunday, 3	101,980,960
October	115,322,139	Wednesday, 4	124,668,800	Sunday, 15	103,722,320
November	114,029,144	Monday, 13	121,005,920	Sunday, 26	102,080,880
December	119,053,325	Friday, 29	125,263,400	Sunday, 24	110,376,440
Average	119,234,968				

TABLE No. 9.

Showing Ratio of the Average Daily Consumption for Each Month to That for the Year, from 1896 to 1905.

Month.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
January	1.02	0.98	0.99	1.01	0.96	1.01	1.02	1.03	1.03	1.03
February	1.01	0.97	1.00	1.07	0.98	0.97	1.04	1.04	1.13	1.09
March	1.00	0.96	0.97	0.99	0.99	0.95	1.00	1.00	1.01	1.04
April	0.98	0.97	0.96	0.98	0.96	0.97	1.00	0.99	0.94	0.99
May	0.98	0.97	0.97	1.01	1.01	0.98	1.01	1.00	0.94	1.02
June	0.98	1.01	1.03	1.04	1.04	1.05	1.02	0.96	0.96	1.01
July	1.00	1.03	1.02	1.02	1.04	1.05	0.99	1.00	0.96	0.99
August	1.02	1.03	1.03	1.01	1.03	1.01	0.97	0.98	0.98	0.96
September	1.01	1.07	1.06	1.01	0.99	1.00	1.00	1.03	1.00	0.96
October	0.99	1.04	1.01	0.98	0.93	1.01	0.99	0.99	1.00	0.97
November	0.98	0.99	0.97	0.94	0.91	0.99	0.96	0.95	1.00	0.96
December	1.03	1.03	0.99	0.94	0.98	1.01	1.02	1.04	1.06	1.00

TABLE No. 10.

Average Depth and Corresponding Quantity of Water in Ridgewood, Mt. Prospect, New Lots and Hempstead Storage Reservoirs.

1905.	Ridgewood Reservoirs. Basin No. 1. Average Depth, Feet.	Basin No. 1. Contents United States Gallons.	Basin No. 2. Average Depth, Feet.	Basin No. 2. Contents United States Gallons.	Basin No. 3. Average Depth, Feet.	Basin No. 3. Contents United States Gallons.	Mount Prospect Reservoir. Average Depth, Feet.	Mount Prospect Reservoir. Contents United States Gallons.	New Lots Reservoir. Average Depth, Feet.	New Lots Reservoir. Contents United States Gallons.	Hempstead Storage Reservoir. Average Depth, Feet.	Hempstead Storage Reservoir. Contents United States Gallons.	Total, All Reservoirs. Contents United States Gallons.
January	15.37	53,346,000	15.28	61,643,000	13.51	98,740,000	21.20	20,531,000	9.64	2,204,000	14.00	483,702,000	720,166,000
February	13.49	46,441,000	13.37	53,492,000	11.36	82,416,000	20.32	19,541,000	6.77	1,359,000	15.19	562,038,000	765,287,000
March	16.41	57,212,000	16.35	66,265,000	14.49	106,257,000	19.97	19,152,000	9.00	2,015,000	15.28	570,612,000	821,513,000
April	17.30	60,546,000	17.25	70,184,000	15.93	117,390,000	20.15	19,352,000	10.34	2,431,000	16.43	649,225,000	919,128,000
May	17.16	60,020,000	17.13	69,660,000	15.82	116,536,000	20.38	19,609,000	11.39	2,801,000	16.95	688,090,000	956,716,000
June	14.97	51,868,000	14.89	59,968,000	13.02	94,999,000	19.92	19,096,000	10.54	2,497,000	15.69	596,488,000	824,916,000
July	12.65	43,390,000	11.77	46,763,000	9.45	68,108,000	15.64	14,478,000	9.82	2,269,000	11.54	331,473,000	506,481,000
August	16.24	56,578,000	16.17	65,485,000	14.66	107,566,000	12.26	11,045,000	10.58	2,531,000	9.13	206,382,000	449,587,000
September	15.31	53,124,000	15.20	61,299,000	14.03	102,723,000	15.53	14,363,000	11.24	2,733,000	10.21	258,247,000	492,489,000
October	15.43	53,568,000	15.33	61,858,000	7.34	52,514,000	17.78	16,749,000	12.87	3,332,000	7.42	136,770,000	324,791,000
November	12.41	42,522,000	12.20	48,563,000	6.10	43,453,000	18.42	17,443,000	12.34	3,116,000	5.73	83,751,000	238,848,000
December	12.41	42,522,000	12.33	49,108,000	11.39	82,642,000	17.05	15,966,000	13.05	3,405,000	4.22	45,990,000	239,633,000
Average	14.93	51,721,000	14.77	59,454,000	12.26	89,221,000	18.22	17,225,000	10.63	2,531,000	11.82	348,458,000	568,610,000

TABLE No. 11.

Showing the Total Monthly and Average Daily Pumping at Ridgewood for the Year 1905, Rainfall for Each Month and Proportion of the Rainfall Corresponding to the Pumping.

Month.	Pumping, U. S. Gallons.				Drainage Area, Square Miles.			Rainfall During Month in Inches.	Water Pumped, Expressed in Rainfall on Watershed.						Average Yield Utilized Per Square Mile of Watershed.					
	Furnished by		Total.	Daily. Average	Old Watershed.	New Watershed.	Total Watershed.		Old.		New.		Total.		U. S. Gallons Daily.			Cubic Feet Per Second.		
	Old Watershed.	New Watershed.							Inches.	Per Cent.	Inches.	Per Cent.	Inches.	Per Cent.	Old.	New.	Total.	Old.	New.	Total.
January	1,801,280,230	1,863,486,620	3,664,766,850	118,218,285	67.4	90.2	157.6	*2.20	1.54	70.00	1.19	54.09	1.34	60.91	862,104	666,435	750,116	1.33	1.03	1.16
February	1,825,039,060	1,659,606,350	3,484,645,410	124,451,622	....	....	....	*3.00	1.56	52.00	1.06	35.33	1.27	42.33	967,057	657,114	789,668	1.49	1.02	1.22
March	1,916,354,060	1,820,748,940	3,737,103,000	120,551,709	....	....	....	*4.05	1.64	40.49	1.16	28.64	1.36	33.58	917,179	651,151	764,922	1.42	1.01	1.18
April	1,675,470,370	1,748,707,980	3,424,178,350	114,139,278	....	....	....	*3.18	1.43	44.97	1.12	35.22	1.25	39.31	828,620	646,234	724,234	1.28	1.00	1.12
May	1,787,552,590	1,734,632,960	3,522,185,550	113,618,889	....	....	....	*1.07	1.53	142.99	1.11	103.74	1.28	119.63	855,534	620,354	720,932	1.32	0.96	1.11
June	1,962,710,600	1,455,151,450	3,417,862,050	113,928,735	....	....	....	*3.41	1.68	49.27	0.93	27.27	1.24	36.36	970,678	537,750	722,898	1.50	0.83	1.12
July	2,118,825,890	1,413,908,960	3,532,734,850	113,959,189	....	....	....	*2.33	1.81	77.68	0.90	38.63	1.29	55.36	1,014,083	505,654	723,091	1.57	0.78	1.12
August	1,868,981,610	1,543,304,990	3,412,286,600	110,073,761	....	....	....	*4.54	1.60	35.34	0.99	21.81	1.24	27.31	894,506	551,929	698,438	1.38	0.85	1.08
September	1,693,001,000	1,528,041,000	3,221,042,000	107,368,067	....	....	....	*4.51	1.45	32.15	0.98	21.73	1.18	26.16	837,290	564,686	681,269	1.29	0.88	1.05
October	1,896,623,000	1,520,062,000	3,416,685,000	110,215,645	....	....	....	*2.86	1.62	56.64	0.97	33.92	1.24	43.36	907,736	543,621	699,338	1.40	0.84	1.08
November	1,839,801,000	1,395,613,000	3,235,414,000	107,847,133	....	....	....	*1.81	1.57	86.74	0.89	49.17	1.18	65.19	909,891	515,748	684,351	1.41	0.79	1.06
December	2,016,159,000	1,658,613,000	3,674,772,000	118,541,032	....	....	....	*3.86	1.72	44.56	1.06	27.46	1.34	34.71	964,937	593,171	752,164	1.49	0.92	1.16
Summary for the year.	22,401,798,410	19,341,877,250	41,743,675,660	114,366,235	67.4	90.2	157.6	*36.82	19.15	52.01	12.36	33.57	15.21	41.31	910,605	587,488	725,674	1.41	0.91	1.12

*Rainfall observed at Hempstead Storage Reservoir.

TABLE NO. 12.

Record Showing the Amount of Water Delivered at the Ridgewood Pumping Station from Each Source During 1905.

Source of Supply.	Underground Water.				Surface Water.						Total U.S.Gallons Delivered During Year.	Average U.S.Gallons Delivered per Day.
	Driven Wells.		Infiltration Galleries.		Pond Pumping.		Filter Plants.		Gravity.			
	Total for Year.	Average, Daily.	Total for Year.	Average, Daily.	Total for Year.	Average, Daily.	Total for Year.	Average, Daily.	Total for Year.	Average, Daily.		
Old Watershed.												
Spring Creek Temporary Driven Well Station	89,019,000	342,888	.....	.....	.....	.....	.....	.....	.....	.....	89,019,000	243,888
Spring Creek Old Driven Well Station	1,412,741,200	3,870,524	.....	.....	.....	.....	.....	.....	.....	.....	1,412,741,200	3,870,524
Shetucket Driven Well Station	90,738,300	248,598	.....	.....	.....	.....	.....	.....	.....	.....	90,738,300	248,598
Oconee Driven Well Station	987,605,720	2,705,769	.....	.....	.....	.....	.....	.....	.....	.....	987,605,720	2,705,769
Baiseley's Driven Well Station	511,013,370	1,400,037	.....	.....	.....	.....	.....	.....	.....	.....	511,013,370	1,400,037
Jameco Driven Well Station	1,188,169,620	3,255,259	.....	.....	.....	.....	.....	.....	.....	.....	1,188,169,620	3,255,259
Baiseley's Filter Plant (Baiseley's Pond)	.....	.....	.....	.....	.....	.....	*1,538,919,000	4,216,216	.....	.....	1,538,919,000	4,216,216
"L" Temporary Driven Well Station	19,200,000	52,603	.....	.....	.....	.....	.....	.....	.....	.....	19,200,000	52,603
Springfield Driven Well Station	1,088,831,250	2,983,099	.....	.....	.....	.....	.....	.....	.....	.....	1,088,831,250	2,983,099
Springfield Filter Plant (Springfield Pond)	.....	.....	.....	.....	.....	.....	*729,494,650	1,998,616	.....	.....	729,494,650	1,998,616
Forest Stream Driven Well Station	1,243,774,890	3,407,602	.....	.....	.....	.....	.....	.....	.....	.....	1,243,774,890	3,407,602
Forest Stream Filter Beds (Conselyea's Pond)	.....	.....	.....	.....	.....	.....	*1,075,331,440	2,946,114	.....	.....	1,075,331,440	2,946,114
Clear Stream Driven Well Station	867,718,000	2,377,309	.....	.....	.....	.....	.....	.....	.....	.....	867,718,000	2,377,309
Watt's Pond Driven Well Station	1,823,587,470	4,996,130	.....	.....	.....	.....	.....	.....	.....	.....	1,823,587,470	4,996,130
Queen's County Water Company Driven Well Station	1,142,782,000	3,130,909	.....	.....	.....	.....	.....	.....	.....	.....	1,142,782,000	3,130,909
Smith's Pond Pumping Station	.....	.....	.....	.....	3,364,845,100	9,218,754	.....	.....	.....	.....	3,364,845,100	9,218,754
Hempstead Filter Beds (Horse Brook)	.....	.....	.....	.....	.....	.....	416,783,400	1,141,872	.....	.....	416,783,400	1,141,872
Supply Ponds—Gravity	.....	.....	.....	.....	.....	.....	.....	.....	4,811,244,000	13,181,490	4,811,244,000	13,181,490
New Watershed.												
Agawam Driven Well Station	477,077,020	1,307,060	.....	.....	.....	.....	.....	.....	.....	.....	477,077,020	1,307,060
Merrick Driven Well Station	594,206,640	1,627,963	.....	.....	.....	.....	.....	.....	.....	.....	594,206,640	1,627,963
Matowa Driven Well Station	742,324,230	2,033,765	.....	.....	.....	.....	.....	.....	.....	.....	742,324,230	2,033,765
Wantagh Driven Well Station	437,135,250	1,197,631	.....	.....	.....	.....	.....	.....	.....	.....	437,135,250	1,197,631
Wantagh Infiltration Galleries	.....	.....	1,589,712,820	4,355,378	.....	.....	.....	.....	.....	.....	1,589,712,820	4,355,378
Massapequa Driven Well Station	705,616,010	1,933,195	.....	.....	.....	.....	.....	.....	.....	.....	705,616,010	1,933,195
Massapequa Infiltration Galleries	.....	.....	116,064,000	317,984	.....	.....	.....	.....	.....	.....	116,064,000	317,984
Supply Ponds—Gravity	.....	.....	.....	.....	.....	.....	.....	.....	14,679,741,280	40,218,469	14,679,741,280	40,218,469
Total	13,421,539,870	36,771,342	1,705,776,820	4,673,361	3,364,845,100	9,218,754	3,760,528,490	10,302,818	19,490,985,280	53,399,960	41,743,675,660	114,366,234

*These supplies are pumped either before or after filtration.

TABLE No. 13.

Water Mains Laid and Removed and Gates and Hydrants Set and Removed to December 31, 1905.

Water Mains Laid.	48-Inch.	42-Inch.	36-Inch.	30-Inch.	24-Inch.	20-Inch.	16-Inch.	14-Inch.	12-Inch.	10-Inch.	8-Inch.	6-Inch.	4-Inch.	Total.	Total Miles.
Total to December 31, 1904	139,480	13	60,184	61,679	19,639	220,500	73,062	3,159	377,068	19,601	845,528	2,026,746	55,565	3,902,224	739.057
During 1905	....	....	....	1,080	1,160	35,457	7,758	....	43,549	....	88,610	34,810	....	212,424	40.232
Total to December 31, 1905	139,480	13	60,184	62,759	20,799	255,957	80,820	3,159	420,617	19,601	934,138	2,061,556	55,565	4,114,648	779.289
Removed during 1905	....	....	....	....	254	266	....	....	....	....	10,102	8,608	....	19,230	3.642
Total feet, December 31, 1905	139,480	13	60,184	62,759	20,545	255,691	80,820	3,159	420,617	19,601	924,036	2,052,948	55,565	4,095,418	775.647
Total miles, December 31, 1905	26.417	.002	11.398	11.886	3.891	48.426	15.307	.598	79.662	3.712	175.007	388.816	10.523	775.647	....
Gates Set.															Hydrants Set.
Total to December 31, 1904	17	....	32	46	29	357	52	1	669	7	1,749	4,294	88	7,341	8,444
During 1905	....	....	....	5	7	53	18	....	109	....	325	374	11	902	1,149
Total to December 31, 1905	17	....	32	51	36	410	70	1	778	7	2,074	4,668	99	8,243	9,593
Removed during 1905	....	....	....	1	....	2	....	....	5	....	31	127	8	174	321
Net total, 1905	17	....	32	50	36	408	70	1	773	7	2,043	4,541	91	8,069	9,272

TABLE No. 14.

High Pressure Fire Service Mains Laid, and Gates and Hydrants Set to December 31, 1905.

Mains Laid.	20-Inch.	16-Inch.	12-Inch.	8-Inch.	Total Linear Feet.	Total Miles.
To December 31, 1905.....	5,522	12,024	16,000	785	34,331	6.502

Gates Set.					Total.	Hydrants Set.
To December 31, 1905.....	13	28	51	207	299	47

TABLE No. 15.

Water Mains Laid, Gates and Hydrants Set During 1897.

Street.	Between What Streets.	Linear Feet of Pipe Laid.					Gates Set.					Hydrants Set.
		36-inch.	20-inch.	12-inch.	8-inch.	6-inch.	30-inch.	20-inch.	12-inch.	8-inch.	6-inch.	
Beard street	Dwight street to Richards street	....	....	....	....	426	....	....	....	....	....	....
Bay Twentieth street	Eighty-sixth street to Benson avenue	....	....	....	....	929	....	....	....	....	2	6
Bay Thirteenth street	Cropsey avenue to Bath avenue	....	....	....	....	620	....	....	....	....	1	2
Buffalo avenue	Butler street to President street	....	....	....	1,577	....	....	....	....	3	....	5
Berry street	North Thirteenth street to North Seventh street	....	....	1,575	....	....	....	....	9	....	7	6
Berry street	South Fourth street to Grand street	....	....	1,139	....	....	....	1	6	....	3	4
Bath avenue	Twenty-fifth avenue to Bay Forty-fourth street	....	....	....	1,283	....	....	....	....	3	....	2
Berry street	Grand street to North Seventh street	....	....	1,563	....	....	....	....	5	2	6	6
Calyer street	Oakland street to Newell street	....	....	....	220	....	....	....	....	1	....	1
Covert street	Hamburg avenue to Knickerbocker avenue	....	....	....	629	....	....	....	....	1	....	3
Classon avenue	Eastern parkway to Degraw street	....	....	....	290	....	....	....	....	1	....	1
Dwight street	Sullivan street to Vandyke street	....	....	....	1,032	....	....	....	....	3	3	4
Douglass street	Rogers avenue to Bedford avenue	....	....	....	431	....	....	....	....	....	1	2
Driggs avenue	North Twelfth street to North Thirteenth street	....	325	....	....	....	....	....	3	1	1	1
Eighteenth avenue	Seventy-fourth street to Eightieth street	....	....	....	1,664	....	....	....	....	3	....	3
Eighty-second street	Twenty-third avenue to Stillwell avenue	....	....	....	....	1,089	....	....	....	....	2	3
Eighty-third street	Twenty-third avenue to Stillwell avenue	....	....	....	....	1,361	....	....	....	....	2	3
Eighty-fourth street	Twenty-third avenue to Twenty-fifth avenue	....	....	....	....	1,565	....	....	....	....	2	4
Eighty-fifth street	Twenty-third avenue to Twenty-fifth avenue	....	....	....	....	1,565	....	....	....	....	2	4
Eighty-eighth street	Third avenue to Fifth avenue	....	....	....	....	1,113	....	....	....	....	3	3
Eightieth street	Second avenue to Third avenue	....	....	....	759	....	....	....	....	1	1	2
Eighty-second street	Second avenue to Third avenue	....	....	....	751	....	....	....	....	1	1	2
Eighty-eighth street	Second avenue to Third avenue	....	....	....	609	....	....	....	....	1	1	2
Eighteenth avenue	Sixtieth street to Fifty-seventh street	....	....	....	866	....	....	....	....	3	....	2
Eldert street	Central avenue to Hamburg avenue	....	....	....	619	....	....	....	....	1	....	3
Eighth avenue	Fifty-eighth street to Forty-ninth street	....	....	....	2,347	....	....	....	1	6	....	4
Eleventh avenue	Eighty-third street to Eighty-sixth street	....	....	....	828	....	....	....	....	1	....	3
Eighty-fifth street	Eleventh avenue to Twelfth avenue	....	....	....	513	....	....	....	....	1	....	1
Eighty-fourth street	Tenth avenue to Twelfth avenue	....	....	....	1,020	....	....	....	....	2	....	3
Eighty-third street	Tenth avenue to Twelfth avenue	....	....	....	1,033	....	....	....	....	2	....	3
Fourth avenue	At junction of Eighty-eighth street	....	....	....	102	....	....	....	....	....	....	....
Fifteenth avenue	Sixtieth street to Fifty-fourth street	....	....	....	1,488	....	....	....	....	1	....	3
Fortieth street	Ninth avenue to Tenth avenue	....	....	....	....	535	....	....	....	....	1	2
Fifteenth avenue	New Utrecht avenue to Seventy-sixth street	....	....	2,485	....	....	....	....	4	....	....	5
Forty-third street	Second avenue to Third avenue	....	....	....	717	....	....	....	....	1	....	2
Forty-first street	Seventh avenue to Eighth avenue	....	....	....	728	....	....	....	....	1	....	3
Fifty-eighth street	Eighth avenue to Ninth avenue	....	....	....	749	....	....	....	1	1	....	2
Fifth avenue	Sixty-fifth street to Sixty-seventh street	....	....	....	499	....	....	....	....	2	....	1
Fifty-second street	Fifth avenue to Sixth avenue	....	....	....	391	....	....	....	....	1	....	1
Granite street	Evergreen avenue to Central avenue	....	....	....	584	....	....	....	....	1	....	3
Henry street	Bush street to Centre street	....	....	....	275	....	....	....	....	1	....	1
I avenue	Ocean parkway to Gravesend avenue	....	....	....	....	1,360	....	....	....	....	2	3
Jefferson avenue	Central avenue to Hamburg avenue	....	....	....	624	....	....	....	....	....	1	3
Leonard street	Driggs avenue to Newton street	....	....	....	1,027	....	....	....	....	....	2	2
New Utrecht avenue	Fort Hamilton avenue to Sixtieth street	....	4,800	179	....	....	....	5	5	....	8	8
New Utrecht avenue	Sixtieth street to Sixty-seventh street	....	....	2,223	....	....	....	....	4	6	....	5
North Twelfth street	Driggs avenue to Berry street	....	....	867	....	....	....	....	1	2	....	2
Ninety-ninth street	Third avenue to Fourth avenue	....	....	....	....	530	....	....	....	....	3	2
Ninety-second street	Fifth avenue to Seventh avenue	....	....	....	....	2,137	....	....	....	....	3	3
Nineteenth avenue	Eighty-sixth street to Benson avenue	....	....	....	....	892	....	....	....	....	....	3
New Utrecht avenue	Fortieth street to Forty-first street	....	....	81	289	....	....	....	1	1	....	1
Ocean avenue	Avenue X to Avenue V	....	....	....	1,657	....	....	....	....	2	....	2
Ocean avenue	Avenue V to Avenue U	....	....	....	837	....	....	....	....	2	....	1
Ovington avenue	New Utrecht avenue to Seventeenth avenue	....	....	....	1,474	....	....	....	....	2	....	5
Parkway, Eastern	Rochester avenue to Utica avenue	....	....	....	750	....	....	....	....	1	....	3
Plaza street	Eastern parkway connection	....	....	60	....	....	....	....	2	....	....	....
Rochester avenue	Eastern parkway to President street	....	....	....	535	....	....	....	....	1	....	2
Sixtieth street	Tenth avenue to Fifteenth avenue	....	....	3,906	....	....	....	....	7	1	....	5
Seventy-seventh street	Third avenue to Fourth avenue	....	....	....	767	....	....	....	....	1	....	3
Seventy-eighth street	Second avenue to Fourth avenue	....	....	....	....	1,574	....	....	....	....	5	....
Seventy-sixth street	Third avenue to Fourth avenue	....	....	....	....	734	....	....	....	....	1	2
Seventy-second street	Second avenue to Third avenue	....	....	....	....	756	....	....	....	....	1	2
Suydam street	Irving avenue to Wyckoff avenue	....	....	....	732	....	....	....	....	1	....	3
Seventy-fourth street	Seventeenth avenue to Eighteenth avenue	....	....	....	....	600	....	....	....	....	1	1
Stillwell avenue	Twenty-fifth avenue to Eighty-second street	....	....	....	719	....	....	....	....	1	....	1

Street.	Between What Streets.	Linear Feet of Pipe Laid.					Gates Set.					Hydrants Set.
		36-inch.	20-inch.	12-inch.	8-inch.	6-inch.	30-inch.	20-inch.	12-inch.	8-inch.	6-inch.	
Sixtieth street	Fifteenth avenue to Eighteenth avenue	....	....	2,359	....	....	....	....	2	....	....	4
Seventh avenue	Fifty-seventh street to Fifty-eighth street	....	....	232	....	....	....	....	1	....	....	1
Shore road	Third avenue to Second avenue	....	....	....	1,878	....	....	....	....	5	3	4
Sixtieth street	Fourth avenue to Fifth avenue	....	....	796	....	....	....	1	3	....	....	3
Sterling place	Washington avenue to Vanderbilt avenue	....	....	....	1,863	....	....	....	....	8	....	6
Shore road	Second avenue to Ninety-first street	....	....	....	1,655	....	....	....	....	5	4	4
Seventy-second street	Second avenue to First avenue	....	....	....	293	....	....	....	....	1	....	1
Seventh avenue	Fortieth street to Forty-first street	....	....	114	149	....	....	....	....	....	....	1
Seventy-ninth street	Seventeenth avenue to Eighteenth avenue	....	....	....	809	....	....	....	....	....	1	2
Shore road	Seventy-ninth street to Eighty-third street	....	....	....	1,429	....	....	....	....	1	....	2
Shore road	Eighty-sixth street to Ninety-first street	....	....	....	1,566	....	....	....	....	3	2	2
Sixty-fifth street	Fifth avenue to Seventh avenue	....	....	....	1,535	....	....	....	....	2	....	5
Sixty-seventh street	Fourth avenue to Fifth avenue	....	....	....	808	....	....	....	....	2	....	2
Seventeenth avenue	Ovington avenue to Seventy-fourth street	....	....	....	1,732	....	....	....	....	4	....	7
Sixty-eighth street	Sixteenth avenue to Eighteenth avenue	....	....	....	896	....	....	....	....	2	....	3
Sixty-ninth street	Sixteenth avenue to Eighteenth avenue	....	....	....	891	....	....	....	....	2	....	3
Seventieth street	Sixteenth avenue to Eighteenth avenue	....	....	....	904	....	....	....	....	2	....	3
Seventy-fourth street	Sixteenth avenue to Eighteenth avenue	....	....	....	889	....	....	....	....	2	....	2
Seventy-third street	Sixteenth avenue to Eighteenth avenue	....	....	....	905	....	....	....	....	2	....	3
Seventy-second street	Sixteenth avenue to Eighteenth avenue	....	....	....	857	....	....	....	....	2	....	3
Thames street	Bogart street to Morgan avenue	....	....	....	483	....	....	....	....	1	....	2
Twenty-third avenue	Eighty-sixth street to Eighty-second street	....	....	....	1,059	....	....	....	....	1	....	2
Twenty-fifth avenue	Eighty-sixth street to Stillwell avenue	....	....	....	588	....	....	....	....	2	....	2
Tenth avenue	Fortieth street to Forty-first street	....	....	....	260	....	....	....	....	1	....	....
Tenth avenue	Thirty-ninth street to Fortieth street	....	....	....	273	....	....	....	....	1	....	....
Third avenue	Shore road to Ninety-ninth street	....	....	....	677	....	....	....	....	1	1	2
Twenty-fifth avenue	Eighty-sixth street to Bath avenue	....	....	....	1,571	....	....	....	....	2	....	4
Thirty-ninth street	Ninth avenue to Tenth avenue	....	....	....	517	....	....	....	....	1	....	2
Willoughby avenue	Irving avenue to Wyckoff avenue	....	....	....	743	....	....	....	....	1	....	3
Fort Hamilton avenue	New distribution	2,000	....	....	....	....	1	1	....	....	....	....
	Branches, connections, etc	....	....	219	693	502	....	....	....	....	....	....
Total		2,000	5,125	17,798	57,338	18,288	1	8	55	121	77	251

TABLE No. 16.

Water Mains Laid, Gates and Hydrants Set During 1898.

Street.	Between What Streets.	Linear Feet of Pipe Laid.			Gates Set.			Hydrants Set.
		12-inch.	8-inch.	6-inch.	12-inch.	8-inch.	6-inch.	
Bedford avenue	Butler street to Douglass street	....	337	....	....	2	....	1
Bryant street	Old Court street to New Court street	....	328	....	....	1	....	1
New Court street	Bryant street to Gowanus Bay	....	484	....	....	1	....	2
Clinton avenue	Flushing avenue to the dock	....	1,742	....	....	4	....	5
Degraw street	Bedford avenue to Rogers avenue	....	484	....	....	1	....	2
Fleeman street	Flushing avenue to Lemon street	....	431	....	....	1	....	2
Hampton place	Park place to Sterling place	....	....	280	....	....	1	1
John street	Adams street to Jay street	523	....	....	2	....	2	....
Lemon street	Clinton avenue to Fleeman street	....	562	....	....	2	....	2
Ocean parkway	Across Neck road	....	180	....	....	2	....	....
Park place	Albany avenue to Troy avenue	....	....	731	....	....	1	3
Seventy-ninth street	Third avenue to Fourth avenue	....	736	....	....	1	....	2
Seventy-first street	Sixteenth avenue to Eighteenth avenue	....	870	....	....	2	....	3
Twenty-first avenue	Eighty-fourth street to Eighty-sixth street	....	....	528	....	....	1	1
Underhill avenue	Park place to Sterling place	....	286	....	....	3	....	1
Windsor place	Eighth avenue to Ninth avenue	....	....	274	....	....	2	1
	Connections and branches	....	101	77	....	....	....	....
Total		523	6,541	1,890	2	20	7	27

TABLE No. 17.

Water Mains Laid, Gates and Hydrants Set During Year Ending December 31, 1899.

Street.	Between What Streets.	Linear Feet of Pipe Laid.				Gates Set.				Hydrants Set.
		16-Inch.	12-Inch.	8-Inch.	6-Inch.	16-Inch.	12-Inch.	8-Inch.	6-Inch.	
Avenue L	East Ninety-second street and Rockaway avenue	....	....	....	1,365	....	....	....	2	2
Avenue U (south side)	Eighty-sixth street and East Thirteenth street	7,172	77	126	....	8	2	2	7	7
Avenue U (north side)	Coney Island avenue and Ocean avenue	....	....	2,800	....	....	....	6	....	7
Avenue L	Ocean parkway and East Eighth street	....	....	765	7	....	....	2	....	7
Avenue Y	East Thirteenth street and Pumping Station	377	....	....	....	2	....	....	1	1
Avenue F	East Ninety-second street and Rockaway avenue	....	....	1,513	....	....	....	3	....	1
Avenue G	East Ninety-second street and Rockaway avenue	....	....	....	1,469	....	....	....	2	1
Avenue K	East Ninety-second street and Rockaway avenue	....	....	1,403	25	....	....	2	....	2
Brooklyn avenue	President street and Union street	....	....	321	....	....	....	1	....	1
Bay Twenty-second street	Eighty-sixth street and Cropsey avenue	....	....	2,189	....	....	....	6	....	6
Bay Twenty-eighth street	Eighty-sixth street and Bath avenue	....	....	1,513	....	....	....	4	....	4
Bay Twenty-ninth street	Eighty-sixth street and Bath avenue	....	....	1,530	....	....	....	4	....	4

Street.	Between What Streets.	Linear Feet of Pipe Laid.				Gates Set.				Hydrants Set.
		16-Inch.	12-Inch.	8-Inch.	6-Inch.	16-Inch.	12-Inch.	8-Inch.	6-Inch.	
Conklin avenue	East Ninety-second street and East Ninety-ninth street	....	....	....	2,000	....	....	....	3	4
Canarsie road	Rockaway avenue and 267 feet south of Schank avenue	....	....	920	....	....	....	1	....	2
Degraw street	Nostrand avenue and New York avenue	....	....	745	....	....	....	1	....	3
Douglass street	Nostrand avenue and New York avenue	....	....	746	....	....	....	1	....	3
Degraw street	Buffalo avenue and Ralph avenue	....	....	797	....	....	....	1	....	3
Eighty-first street	Second avenue and Third avenue	....	....	756	....	....	....	1	....	2
Eighty-third street	Second avenue and Third avenue	....	346	40	....	....	1	....	....	2
Eighty-eighth street	Fifth avenue and Seventh avenue	....	....	1,884	....	....	....	4	....	3
Eighteenth avenue	Sixty-third street and Sixty-seventh street	....	....	1,100	....	....	....	2	....	2
Eighteenth avenue	Fiftieth street and Eighty-seventh street	....	....	1,749	....	....	....	3	....	4
Eighty-fifth street	Eleventh avenue and Eighteenth avenue	....	....	271	....	....	....	1	....	1
Eighty-sixth street	Twenty-fifth avenue and Avenue U	1,187	....	....	....	....	....	....	1	1
East Thirteenth street	Avenue V and Avenue U	730	....	....	....	1	....	....	1	1
Eightieth street	Twenty-second avenue and Stillwell avenue	....	....	1,240	....	....	....	2	....	3
Eighty-first street	Twenty-second avenue and Twenty-fourth avenue	....	....	1,508	....	....	....	2	....	4
East Eighth street	Avenue L and Avenue K	....	....	585	....	....	....	1	....	2
East Ninety-second street	Avenue F and Avenue M	....	....	....	4,494	....	....	....	6	5
East Ninety-fourth street	Avenue F and 117 feet south of Avenue G	....	....	....	847	....	....	....	1	2
East Ninety-fourth street	Flatlands avenue and 599 feet south of Avenue L	....	....	....	2,978	....	....	....	4	2
Forty-fourth street	Second avenue and Third avenue	....	....	778	....	....	....	2	....	3
Fortieth street	Sixth avenue and Seventh avenue	....	....	836	....	....	....	1	....	3
Fifty-first street	Seventh avenue and Eighth avenue	....	....	727	....	....	....	1	....	2
Fifty-first street	Third avenue and Fourth avenue	....	692	....	....	....	....	....	....	3
Fifty-second street	Eighth avenue and Ninth avenue	....	....	747	....	....	....	1	....	3
Fifty-third street	Fifth avenue and Sixth avenue	....	....	598	....	....	....	1	....	2
Fourth avenue	Sixtieth street and Bay Ridge avenue	2,687	....	54	....	3	....	....	5	5
Fifteenth avenue	Bath avenue and Cropsey avenue	....	....	723	....	....	....	1	....	2
Himrod street	Irving avenue and Wyckoff avenue	....	....	750	....	....	....	2	....	3
Morgan avenue	Nassau avenue and Driggs avenue	....	50	948	....	....	....	2	....	3
Newton street	Manhattan avenue and Engert street	....	....	804	41	....	....	4	....	2
Ninety-third street	Third avenue and Fourth avenue	....	....	748	....	....	....	1	....	2
President street (north and south sides)	Brooklyn avenue and Kingston avenue	....	....	789	725	....	....	1	1	5
Prospect avenue	Ninth avenue and Tenth avenue	....	....	718	....	....	....	1	....	3
Rockaway avenue	Sutter avenue and Canarsie road	....	14,720	130	48	....	19	2	14	14
Sixtieth street	Third avenue and Fourth avenue	....	800	14	....	....	2	..	3	3
Sixty-first street	Third avenue and Fourth avenue	....	....	800	....	....	....	2	....	3
Sixty-fifth street	First avenue and Third avenue	....	....	1,611	....	....	....	4	....	4
Seventy-third street	Second avenue and Third avenue	....	....	779	....	....	....	2	....	2
Seventh avenue	Eighty-sixth street and Ninety-second street	....	....	1,416	33	....	....	2	1	3
Sixty-seventh street	Seventeenth avenue and Eighteenth avenue	....	....	822	....	....	....	2	....	3
Seventy-first street	Seventeenth avenue and Eighteenth avenue	....	....	594	....	....	....	....	....	1
Seventy-ninth street	Twenty-second avenue and Twenty-third avenue	....	....	729	....	....	....	1	....	2
Sixty-fifth street	Seventh avenue and Eighth avenue	....	....	790	....	....	....	1	....	2
Sutter avenue (Union avenue)	Thatford avenue and Rockaway avenue	....	292	....	....	....	1	....	....	....
Sterling place	New York avenue and Brooklyn avenue	....	....	621	....	....	....	1	....	1
Sixtieth street	Eighth avenue and Tenth avenue	....	1,573	10	....	....	3	....	5	5
Third avenue	Sixtieth street and Sixty-fifth street	....	....	1,333	....	....	....	5	....	3
Third avenue	Seventy-third street and Seventy-fourth street	....	....	257	....	....	....	1	....	....
Third avenue	Eighty-second street and Eighty-third street	....	....	266	....	....	....	2	....	....
Twelfth avenue	Eighty-third street and Eighty-sixth street	....	....	831	....	....	....	2	....	2
Twenty-third avenue	Eighty-sixth street and Bath avenue	....	....	1,557	....	....	....	2	....	6
Twenty-third avenue	Eighty-second street and Stillwell avenue	....	....	960	....	....	....	2	....	2
Thatford avenue	East New York avenue and Sutter avenue	....	1,886	....	....	....	1	....	....	....
Throop avenue	Halsey street and McDonough street	....	....	588	....	....	....	2	5	1
Thirty-seventh street	Fourth avenue and Fifth avenue	....	....	759	....	....	....	1	....	3
Virginia place	Park place and Sterling place	....	....	....	280	....	....	....	1	1
Total		12,153	20,436	48,588	14,312	14	29	102	63	189

TABLE No. 18.

Water Mains Laid, Gates and Hydrants Set During Year Ending December 31, 1900.

Street.	Between What Streets.	Linear Feet of Pipe Laid.			Gates Set.			Hydrants Set.
		12-Inch.	8-Inch.	6-Inch.	12-Inch.	8-Inch.	6-Inch.	
Loraine street	Columbia street and Otsego street	....	360	....	....	1	....	1
Avenue I	Gravesend avenue and West street	....	351	....	....	2	....	1
West street	Avenue I and Twentieth avenue	....	355	....	....	....	....	1
Twentieth avenue	Fifty-second street and West street	....	471	....	....	2	....	2
Prescott place	Atlantic avenue and Herkimer street	....	....	417	....	....	2	2
Fifty-second street	Eighteenth avenue and Twentieth avenue	....	1,609	....	....	3	....	4
Seventieth street	From 160 feet east of Seventeenth avenue to Nineteenth avenue	....	1,321	....	....	....	....	3
Seventy-first street	Eighteenth avenue and Nineteenth avenue	....	740	....	....	2	....	2
New York avenue	Park place and President street	....	2,081	....	....	8	....	6
Eastern parkway	Nostrand avenue and New York avenue	771	....	....	2	....	....	3
President street	New York avenue and Brooklyn avenue	....	790	792	....	2	2	5
Second street	Eighth avenue and Ninth avenue	....	770	26	....	1	1	3
Eightieth street	Third avenue and Fifth avenue	....	1,638	....	....	3	....	5
Narrows avenue	Bay Ridge avenue and Seventy-first street	....	767	....	....	1	....	2

Street.	Between What Streets.	Linear Feet of Pipe Laid. 12-Inch.	8-Inch.	6-Inch.	Gates Set. 12-Inch.	8-Inch.	6-Inch.	Hydrants Set.
Van Sicklen avenue	Kings Highway and Neck road	....	3,200	....	....	4	....	7
Bath avenue	Twenty-second avenue and Bay Twenty-eighth street	....	554	....	....	2	....	1
Bay Twenty-sixth street	Bath avenue and Cropsey avenue	....	....	603	....	....	2	1
Eighty-third street	Eleventh avenue and Twelfth avenue	....	283	....	....	1	....	1
Eighty-fourth street	Eleventh avenue and Twelfth avenue	....	276	....	....	1	....	1
Eighty-fifth street	Tenth avenue and Eleventh avenue	....	725	....	....	1	....	2
Fort Hamilton avenue	Seventy-ninth street and Shore road	3,315	3,380	....	5	6	8	13
Coney Island avenue	Avenue N and Avenue S	4,468	....	65	6	....	7	6
East Twelfth street	Avenue N and Avenue O	....	954	....	....	2	....	2
East Thirteenth street	Avenue N and Avenue O	....	966	....	....	2	....	2
East Fourteenth street	Avenue M and Avenue O	....	1,283	....	....	2	....	3
East Fifteenth street	Avenue M and Avenue O	....	1,267	....	....	2	....	3
Avenue N	Coney Island avenue and Ocean avenue	2,424	....	....	5	....	....	4
East Eighteenth street	Avenue J and Avenue L	....	....	1,406	....	....	1	2
East Nineteenth street	Avenue M and Avenue J	....	....	1,846	....	....	2	3
Avenue K	East Seventeenth street and Ocean avenue	....	719	....	....	1	....	1
Avenue L	East Eighteenth street and East Twenty-first street	....	898	....	....	2	....	....
East Twenty-first street	Avenue K and Avenue M	....	....	1,278	....	....	3	2
East Twenty-second street	Avenue L and Avenue M	....	....	369	....	....	1	1
Avenue M	Ocean avenue and East Twenty-second street	....	575	....	....	1	....	....
Ocean avenue	Avenue N and Avenue J	3,471	....	....	5	....	....	5
Irving avenue	DeKalb avenue and Flushing avenue	....	1,846	....	....	5	....	7
St. Nicholas avenue	Hart street and Flushing avenue	....	....	1,437	....	....	5	6
Hamburg avenue	Eldert street and Halsey street	....	271	....	....	1	....	1
Moffat street	Evergreen avenue and Central avenue	....	669	....	....	2	....	2
Chauncey street	Evergreen avenue and Central avenue	....	668	....	....	2	....	2
Evergreen avenue	Chauncey street and Pilling street	....	315	18	....	1	1	1
Total		14,449	30,102	8,257	23	63	35	119

TABLE No. 19.

Water Mains Laid, Gates and Hydrants Set During Year Ending December 31, 1901.

Street.	Between What Streets.	Linear Feet of Pipe Laid. 12-Inch.	8-Inch.	6-Inch.	Gates Set. 12-Inch.	8-Inch.	6-Inch.	Hydrants Set.
Flatlands avenue	East Ninety-second street and East Ninety-ninth street	....	1,911	24	....	2	....	3
Canarsie road	Avenue N and Avenue M	....	....	818	....	....	1	1
Berry street and Nassau avenue	North Thirteenth street and Manhattan avenue	881	....	318	1	....	4	3
East Twelfth street	Avenue T and Avenue V	....	....	1,586	....	....	3	4
Homecrest avenue	Avenue T and Avenue V	....	....	1,579	....	....	3	4
East Thirteenth street	Avenue T and Avenue V	....	....	1,447	....	....	3	4
East Fourteenth street	Avenue T and Avenue V	....	....	824	....	....	2	2
East Fifteenth street	Avenue T and Avenue V	....	....	824	....	....	2	2
East Sixteenth street	Avenue T and Avenue V	....	....	1,602	....	....	4	4
East Seventeenth street	Avenue T and Avenue V	....	....	1,602	....	....	4	4
Avenue T	Coney Island avenue and East Nineteenth street	....	2,267	....	....	5	....	4
Avenue V	Ocean avenue and East Sixteenth street	....	1,085	....	....	2	....	2
Ocean avenue	Avenue U and Avenue P	4,213	....	....	6	....	....	10
St. Francis place	St. John's place and Degraw street	....	332	....	....	2	....	1
St. Charles place	St. John's place and Degraw street	....	332	....	....	2	....	1
Degraw street	Franklin avenue and Bedford avenue	....	831	....	....	2	....	2
St. John's place	Franklin avenue and Bedford avenue	....	800	....	....	2	....	2
Seventy-third street	Seventeenth avenue and Nineteenth avenue	....	1,324	....	....	2	....	3
Ninety-third street	Second avenue and Third avenue	....	757	....	....	1	....	2
Seventy-fifth street	Second avenue and Third avenue	....	842	....	....	1	2	2
Seventy-ninth street	Second avenue and Third avenue	....	851	....	....	1	1	2
Gelston avenue	Ninety-second street and Ninety-fourth street	....	....	582	....	....	1	2
East Eighteenth street	Avenue T and Avenue V	....	....	1,549	....	....	4	4
East Nineteenth street	Avenue T and Avenue V	....	....	1,613	....	....	4	4
Meeker avenue	Newtown creek and Kingsland avenue	2,591	648	....	6	2	7	8
Kingsland and Meeker avenues	Dead end connection	....	179	....	....	1	....	....
Engert street	Graham avenue and Eckford street	....	270	....	....	1	....	1
Eckford street	Engert street and Driggs avenue	....	471	....	....	1	....	2
St. Mark's avenue	Ralph avenue and Howard avenue	....	728	....	....	1	....	3
Prospect place	Ralph avenue and Howard avenue	....	722	....	....	1	....	3
Howard avenue	Bergen street and Douglass street	....	1,595	....	....	4	....	5
Pacific street	Ralph avenue and Buffalo avenue	....	....	880	....	....	3	3
St. Mark's avenue	Saratoga avenue and Hopkinson avenue	....	762	....	....	1	....	3
Hopkinson avenue	Bergen street and Eastern parkway	....	766	....	....	2	....	2
Avenue S	Stillwell avenue and West Tenth street	....	1,087	....	....	2	....	3
Ocean parkway (east side)	Avenue L and Avenue M	....	887	....	....	2	....	2
Seventy-third street (north side)	Fourth avenue and Sixth avenue	....	1,561	....	....	2	....	4
Seventy-third street (south side)	Fourth avenue and Sixth avenue	....	....	1,561	....	....	2	2
Seventy-second street (north side)	Fourth avenue and Sixth avenue	....	1,561	....	....	2	....	4
Seventy-second street (south side)	Fourth avenue and Sixth avenue	....	....	1,562	....	....	2	2
Seventy-fifth street	Fourth avenue and Seventh avenue	2,450	....	....	3	....	9	9
Total		10,135	22,569	18,371	16	44	61	128

TABLE No. 20.

Water Mains Laid, Gates and Hydrants Set During Year Ending December 31, 1902.

Street.	Between What Streets.	Linear Feet of Pipe Laid.				Gates Set.				Hydrants Set.
		20-inch.	12-inch.	8-inch.	6-inch.	20-inch.	12-inch.	8-inch.	6-inch.	
Seventy-second street (north side)..	Third avenue to Fourth avenue	....	....	....	804	....	....	....	2	2
Seventy-second street (south side)..	Third avenue to Fourth avenue	....	....	....	803	....	....	....	2	1
Forty-second street	Second avenue to Third avenue	....	....	779	....	....	....	2	....	3
Fiftieth street	Second avenue to Third avenue	....	....	....	433	....	....	....	1	1
Fifty-third street	Sixth avenue to Seventh avenue	....	....	726	....	....	....	1	....	3
Sixtieth street	Second avenue to Third avenue	....	724	....	....	....	1	....	3	3
Sixtieth street	Fifth avenue to Eighth avenue	....	2,360	40	....	....	4	1	9	9
Forty-second street	Seventh avenue to Old City Line	....	....	1,120	....	....	....	2	....	5
Forty-third street	Seventh avenue to Old City Line	....	....	1,070	....	....	....	2	....	5
Ninety-sixth street	Flatlands avenue to Skidmore lane	....	....	....	545	....	....	....	1	2
Flatlands avenue	East Ninety-second street to Varkins Hook road	....	....	1,576	25	....	....	3	....	4
Suydam street	Irving avenue to Knickerbocker avenue	....	....	750	....	....	....	2	....	3
Saratoga avenue	Bergen street to Eastern parkway	1,254	....	27	....	2	....	....	4	4
Halsey street	Hamburg avenue to Knickerbocker avenue	....	....	675	....	....	....	1	....	3
Dead ends connected		66	1,136	1,494	324	1	4	5	7	7
Neptune avenue	West Twenty-first street to Warehouse avenue	....	299	....	....	....	....	....	....	1
Warehouse avenue	Neptune avenue to Surf avenue	....	....	....	1,512	....	....	....	2	4
Mermaid avenue	West Twenty-second street to West Twenty-third street	....	....	282	....	....	....	1	....	1
Ocean avenue	Avenue P to Avenue O	....	776	....	....	....	1	....	....	2
Avenue P	East Twenty-second street to East Seventeenth street	....	....	1,444	....	....	....	3	....	1
East Nineteenth street	Kings Highway to 542 feet north of Avenue P	....	....	....	573	....	....	....	1	1
Warwick street	Glenmore avenue to Blake avenue	....	....	....	1,930	....	....	....	4	4
Elton street	Sutter avenue to Blake avenue	....	....	....	520	....	....	....	1	1
Bristol street	East New York avenue to Blake avenue	....	....	....	2,300	....	....	....	4	6
Livonia avenue	Thatford street to Sackman street	....	....	1,331	....	....	....	4	2	4
Osborn street	Dumont avenue to Livonia avenue	....	....	....	623	....	....	....	....	1
Sackman street	Dumont avenue to Livonia avenue	....	....	....	549	....	....	....	1	1
Stone avenue	Riverdale avenue to Newport avenue	....	....	....	398	....	....	....	1	1
Thatford street	Livonia avenue to Riverdale avenue	....	....	....	567	....	....	....	....	1
East Twenty-first street	Avenue P to Avenue O	....	....	....	803	....	....	....	1	2
East Twenty-second street	Avenue P to Avenue O	....	....	....	731	....	....	....	1	2
East Seventeenth street	Kings Highway to Avenue O	....	....	....	1,179	....	....	....	2	1
East Eighteenth street	Kings Highway to Avenue O	....	....	....	816	....	....	....	2	1
Kings Highway	East Seventeenth street to Ocean avenue	....	....	....	907	....	....	....	2	1
Sheffield street	Belmont avenue to New Lots road	....	....	....	3,364	....	....	....	4	6
Glen street	Railroad avenue to Crescent avenue	....	....	....	528	....	....	....	2	2
Weldon street	Railroad avenue to Crescent avenue	....	....	....	526	....	....	....	1	2
Magenta street	Railroad avenue to Market street	....	....	....	1,093	....	....	....	2	4
Euclid street	Hill street to Weldon street	....	....	....	501	....	....	....	2	....
Hill street	Railroad avenue to Market street	....	....	....	1,092	....	....	....	2	4
Lincoln avenue	Atlantic avenue to Glenmore avenue	....	....	....	1,884	....	....	....	3	5
McKinley avenue	Railroad avenue to Enfield street	....	....	1,010	....	....	....	4	....	3
Sheridan street	Glenmore avenue to Atlantic avenue	....	....	....	1,932	....	....	....	3	5
Grant avenue	Liberty avenue to 260 feet north of McKinley avenue	....	....	....	909	....	....	....	3	3
Enfield street	Glenmore avenue to Glen street	....	....	....	1,490	....	....	....	3	4
Glenmore avenue	Railroad avenue to Elderts lane	....	....	986	....	....	....	3	....	4
Shepherd avenue	Atlantic avenue to Fulton street	....	....	....	665	....	....	....	1	2
Shepherd avenue	Liberty avenue to 294 feet north of Liberty avenue	....	....	....	334	....	....	....	1	1
Dresden street	Atlantic avenue to Liberty avenue	....	....	....	676	....	....	....	1	2
Ridgewood avenue	Hale street to Richmond street	....	....	1,043	....	....	....	3	....	3
Hale street	Ridgewood avenue to Jamaica avenue	....	....	....	894	....	....	....	2	2
Total		1,320	5,295	14,353	32,280	3	10	37	83	143

TABLE No. 21.

Water Mains Laid and Gates and Hydrants Set During 1903.

Street.	Between.	Linear Feet of Pipe Laid.							Gates Set.						Hydrants Set.
		48-In.	36-In.	30-In.	20-In.	12-In.	8-In.	6-In.	36-In.	30-In.	20-In.	12-In.	8-In.	6-In.	
Avenue U	Ocean parkway and Coney Island avenue	....	....	....	....	....	1,170	....	....	....	....	....	4	....	4
Avenue T	East Eighth street and Coney Island avenue	....	....	....	....	....	614	....	....	....	....	....	2	....	2
Albany avenue	President and Malbone streets	....	....	....	....	....	1,343	....	....	....	....	....	3	....	4
Avenue L	East Ninety-second and East Ninety-sixth streets	....	....	....	....	....	1,607	....	....	....	....	....	3	....	4
Ames street	East New York and Sutter avenues	....	....	....	....	....	1,375	....	....	....	....	....	4	....	4
Amboy street	East New York and Sutter avenues	....	....	....	....	....	1,464	....	....	....	....	....	4	....	4
Atlantic avenue	Fountain avenue and Logan street	....	....	....	....	....	245	....	....	....	....	....	1	....	....
Atlantic avenue	Ridgewood Engine House and Manhattan Crossing	7,819	....	....	....	....	....	....	2	....	....	2	....	....	....
Atlantic avenue	Carlton and Flatbush avenues	....	2,093	78	....	....	....	....	....	1	....	....	....	1	....
Avenue J	Ocean avenue and East Sixteenth street	....	....	....	....	1,142	....	....	....	....	....	2	....	3	3
Ashford street	Pitkin and Belmont avenues	....	....	....	....	....	....	442	....	....	....	....	....	1	1
Atkins avenue	Pitkin and Liberty avenues	....	....	....	....	....	880	....	....	....	....	....	2	....	2
Avenue P	East Twenty-second and East Twenty-fourth streets	....	....	....	....	....	442	....	....	....	....	....	....	....	1
Avenue O	West Second and West Sixth streets	....	....	....	....	....	945	....	....	....	....	....	3	....	3
Avenue Q	East Eighteenth and East Twenty-fourth streets	....	....	....	....	....	1,719	....	....	....	....	....	4	....	5
Avenue R	Coney Island avenue and East Fourteenth street	....	....	....	....	....	840	....	....	....	....	....	2	....	2

Street.	Between.	Linear Feet of Pipe Laid.							Gates Set.						Hydrants Set.
		48-In.	36-In.	30-In.	20-In.	12-In.	8-In.	6-In.	36-In.	30-In.	20-In.	12-In.	8-In.	6-In.	
Avenue R	East Eighteenth and East Twenty-fifth streets	....	....	....	....	1,980	....	....	....	....	....	5	....	7	7
Bay Thirty-second street	Eighty-sixth street and Cropsey avenue	....	....	....	....	....	2,243	....	....	....	....	....	4	....	8
Barbey street	Pitkin and Belmont avenues	....	....	....	....	....	....	480	....	....	....	....	....	2	2
Barbey street	Dumont and Blake avenues	....	....	....	....	....	....	526	....	....	....	....	....	1	1
Bridge street	Willoughby avenue and Sands street	....	....	....	....	2,793	....	....	....	....	....	7	....	7	4
Berriman street	Belmont avenue and New Lots road	....	....	....	....	....	....	1,740	....	....	....	....	....	4	6
Blake avenue	Hopkinson avenue and Bristol street	....	....	....	....	....	229	....	....	....	....	....	1	....	1
Blake avenue	Elton and Warwick streets	....	....	....	....	....	668	....	....	....	....	....	2	....	2
Belmont avenue	Vesta and Sackman streets	....	....	....	....	....	803	....	....	....	....	....	3	....	3
Belmont avenue	Warwick avenue and Elton street	....	....	....	....	....	671	....	....	....	....	....	2	....	3
Bogert street	Johnson avenue and Seigel street	....	....	....	....	....	719	....	....	....	....	....	3	2	2
Bushwick avenue	Jamaica avenue and Conway street	....	....	....	....	....	1,687	....	....	....	....	....	3	....	5
Christopher street	Dumont and Loft avenues	....	....	....	....	....	....	2,230	....	....	....	....	....	3	4
Cleveland street	Glenmore and Pitkin avenues	....	....	....	....	....	....	429	....	....	....	....	....	1	2
Cypress avenue	Ridgewood Reservoir and Myrtle avenue	6,086	7	24	....	....	....	....	2	1	....	1	....	....	....
Douglass street	East New York and Sutter avenues	....	....	....	....	....	1,288	....	....	....	....	....	4	....	4
Dumont avenue	Vesta avenue and Sackman street	....	....	....	....	....	702	....	....	....	....	....	....	....	2
Dumont avenue	Linwood avenue and Ashford street	....	....	....	....	....	676	....	....	....	....	....	2	....	2
Dikeman street	Ferris street and East river	....	....	....	....	....	....	432	....	....	....	....	....	....	1
Dean street	Rockaway avenue and Old City Line	....	....	....	....	....	301	....	....	....	....	....	1	....	1
Etna avenue	Richmond and Euclid avenues	....	....	....	....	....	765	....	....	....	....	....	2	....	2
East Seventeenth street	103 feet south of Avenue O and Avenue O	....	....	....	....	....	....	103	....	....	....	....	....	....	....
East Eighteenth street	333 feet south of Avenue O and Avenue O	....	....	....	....	....	....	333	....	....	....	....	....	....	....
East Nineteenth street	151 feet south of Avenue O and Avenue O	....	....	....	....	....	....	151	....	....	....	....	....	....	....
East Twenty-first street	81 feet south of Avenue O and Avenue O	....	....	....	....	....	....	81	....	....	....	....	....	....	....
East Twenty-second street	159 feet south of Avenue O and Avenue O	....	....	....	....	....	....	159	....	....	....	....	....	....	....
East Nineteenth street	350 feet south of Avenue K and Avenue J	....	....	....	....	....	....	360	....	....	....	....	....	1	1
East Eighteenth street	350 feet south of Avenue K and Avenue J	....	....	....	....	....	....	354	....	....	....	....	....	1	1
East Seventh street	Avenue T and Avenue U	....	....	....	....	....	....	670	....	....	....	....	....	1	2
East Eighth street	Avenue T and Avenue U	....	....	....	....	....	....	834	....	....	....	....	....	2	2
East Ninth street	Avenue T and Avenue U	....	....	....	....	....	....	835	....	....	....	....	....	2	2
East Twelfth street	Avenue Q and Avenue S	....	....	....	....	....	1,614	....	....	....	....	....	3	....	4
East Thirteenth street	Avenue Q and Avenue S	....	....	....	....	....	1,693	....	....	....	....	....	3	....	4
East Fourteenth street	Avenue R and Avenue S	....	....	....	....	....	767	....	....	....	....	....	2	....	2
East New York avenue	Saratoga avenue and Chester street	....	....	....	....	128	1,548	....	....	....	....	1	5	....	5
East Eighteenth street	King's Highway and Avenue R	....	....	....	....	....	....	1,433	....	....	....	....	....	3	4
East Nineteenth street	King's Highway and Avenue R	....	....	....	....	....	....	1,521	....	....	....	....	....	3	4
East Twenty-first street	Avenue P and Avenue R	....	....	....	....	....	....	1,698	....	....	....	....	....	4	4
East Twenty-second street	Avenue P and Avenue R	....	....	....	....	....	....	1,700	....	....	....	....	....	4	4
East Twenty-third street	Avenue P and Avenue R	....	....	....	....	....	....	1,787	....	....	....	....	....	5	4
East Twenty-fourth street	Avenue P and Avenue R	....	....	....	....	....	....	1,528	....	....	....	....	....	3	4
East Twenty-fifth street	Avenue Q and Avenue R	....	....	....	....	....	463	....	....	....	....	....	1	....	1
Fifty-fourth street	Eighth avenue and Ninth avenue	....	....	....	....	....	754	....	....	....	....	....	1	....	2
Fifty-seventh street	Seventh avenue and Eighth avenue	....	....	....	....	....	752	....	....	....	....	....	2	....	2
Fanchon place	Jamaica and Bushwick avenues	....	....	....	....	....	....	684	....	....	....	....	....	1	2
Fulton street	Crescent and Hemlock streets	....	....	....	....	....	325	....	....	....	....	....	1	....	1
Folsom place	Linwood avenue and Essex street	....	....	....	....	....	....	220	....	....	....	....	....	1	1
Forty-eighth street	Second and Third avenues	....	....	....	....	....	781	....	....	....	....	....	2	....	3
First street	Third and Fourth avenues	....	....	....	....	....	900	....	....	....	....	....	1	....	....
Fourth street	Eighth and Ninth avenues	....	....	....	....	....	801	....	....	....	....	....	1	1	3
Fiftieth street	Seventh and Eighth avenues	....	....	....	....	....	805	....	....	....	....	....	3	....	3
Fifty-sixth street	Sixth and Seventh avenues	....	....	....	....	....	723	....	....	....	....	....	1	....	3
Fountain avenue	Glenmore and Atlantic avenues	....	....	....	....	....	....	1,445	....	....	....	....	....	6	6
Forty-fourth street	First and Second avenues	....	....	....	....	....	775	....	....	....	....	....	1	....	3
Gravesend avenue	King's Highway and Avenue P	....	....	....	....	1,630	....	....	....	....	....	2	....	5	5
Gillen place	Jamaica and Bushwick avenues	....	....	....	....	....	747	....	....	....	....	....	2	....	2
Greene avenue and Hanson place	Flatbush avenue and Adelphi street	....	....	....	....	2,189	....	....	....	....	....	4	....	....	8
Hemlock street	Fulton street and Atlantic avenue	....	....	....	....	....	....	699	....	....	....	....	....	1	2
Hopkinson avenue	East New York avenue and Eastern parkway	....	....	....	....	....	150	....	....	....	....	....	1	....	1
Himrod street	St. Nicholas avenue and Queens County Line	....	....	....	....	....	....	401	....	....	....	....	....	1	1
Hopkinson avenue	East New York avenue and Blake avenue	....	....	....	....	....	2,109	....	....	....	....	....	6	....	5
Hausman street	Meeker and Nassau avenues	....	....	....	....	....	....	210	....	....	....	....	....	1	....
Hinsdale avenue	Sutter and Livonia avenues	....	....	....	....	....	....	1,660	....	....	....	....	....	3	3
Hopkinson avenue	Newport and Lott avenues	....	....	....	....	....	....	594	....	....	....	....	....	3	2
Hancock street	Hamburg and Knickerbocker avenues	....	....	....	....	....	671	....	....	....	....	....	2	....	3
Huntington street	Hicks and Henry streets	....	....	....	....	....	505	....	....	....	....	....	1	....	2
Jefferson avenue	Hamburg and Knickerbocker avenues	....	....	....	....	....	674	....	....	....	....	....	1	....	3
Jardine place	Herkimer street and Atlantic avenue	....	....	....	....	....	....	383	....	....	....	....	....	1	1
King's Highway	Van Sicklen and East Second streets	....	....	....	....	....	857	....	....	....	....	....	3	....	2
Linden street	Hamburg and Knickerbocker avenues	....	....	....	....	....	680	....	....	....	....	....	2	....	3
Liberty avenue	Grant avenue and Eldert lane	....	....	....	....	....	207	....	....	....	....	....	1	....	1
McKibben street	Bushwick avenue and Bogert street	....	....	....	....	....	1,688	....	....	....	....	....	4	....	5
North Eighth street	Union avenue and Havemeyer street	....	....	....	....	....	....	480	....	....	....	....	....	2	3
Neptune avenue	Warehouse avenue and West Twenty-third street	....	....	....	....	303	....	....	....	....	....	1	....	....	1
Norwood avenue	Fulton street and Jamaica avenue	....	....	....	....	....	....	1,676	....	....	....	....	....	4	5
Newport avenue	Rockaway avenue and Amboy street	....	....	....	....	....	1,312	92	....	....	....	....	9	2	3
Ocean avenue	Avenue N and Avenue O	....	....	....	....	1,193	....	....	....	....	....	1	....	2	2
Ocean avenue	Avenue J and Avenue I	....	....	....	....	934	....	....	....	....	....	2	....	....	2
Osborn street	Riverdale and Livonia avenues	....	....	....	....	....	....	546	....	....	....	....	....	1	1
Pitkin avenue	Schenck avenue and Essex street	....	....	....	....	....	1,955	....	....	....	....	....	5	1	5

Street.	Between.	Linear Feet of Pipe Laid. 48-In.	36-In.	30-In.	20-In.	12-In.	8-In.	6-In.	Gates Set. 36-In.	30-In.	20-In.	12-In.	8-In.	6-In.	Hydrants Set.
Pine street	Fulton and Etna streets	....	....	....	....	....	....	901	....	....	....	....	....	1	3
Pitkin avenue	Saratoga avenue and Bristol street	....	....	....	....	1,322	....	....	....	....	....	4	....	....	4
Pitkin avenue	Bristol and Chester streets	....	....	....	....	....	255	....	....	....	....	....	1	....	1
Pacific street	100 feet west of Stone avenue and Stone avenue	....	....	....	....	....	205	....	....	....	....	....	1	....	....
Ridgewood avenue	Chestnut avenue and Crescent street	....	....	....	....	....	858	....	....	....	....	....	3	....	2
Riverdale avenue	Powell street and Stone avenue	....	....	....	....	....	749	....	....	....	....	....	2	....	2
Railroad avenue	Liberty and Glenmore avenues	....	....	....	....	....	....	488	....	....	....	....	....	1	1
Sixty-fifth street	Eighth and Ninth avenues	....	....	....	....	....	785	....	....	....	....	....	1	....	2
Saratoga avenue	Butler street and East New York avenue	....	....	....	486	....	....	....	....	....	1	1	....	1	1
Saratoga avenue	East New York and Sutter avenues	....	....	....	....	1,198	....	....	....	....	....	3	....	....	3
Sutter avenue	Saratoga avenue and Bristol street	....	....	....	....	....	1,287	....	....	....	....	....	3	....	5
Seventy-ninth street	Fourth and Fifth avenues	....	....	....	....	....	769	....	....	....	....	....	1	....	2
Stone avenue	East New York and Liberty avenues	....	....	....	....	....	....	296	....	....	....	....	....	2	1
Stone avenue	Pacific street and Atlantic avenue	....	....	....	....	....	241	....	....	....	....	....	1	....	1
Sterling place	Kingston and Albany avenues	....	....	....	....	....	770	....	....	....	....	....	2	2	2
Schenck avenue	Dumont avenue and New Lots road	....	....	....	....	....	....	936	....	....	....	....	....	2	2
Sutter avenue	Vesta avenue and Sackman street	....	....	....	....	....	795	....	....	....	....	....	2	1	3
Sutter avenue	Schenck avenue and Warwick street	....	....	....	....	....	609	....	....	....	....	....	2	....	2
Sixty-fifth street	Avenue O and Avenue P	....	....	....	....	....	1,370	....	....	....	....	....	3	....	4
Sackett street	Third and Fourth avenues	....	....	....	....	....	707	....	....	....	....	....	2	....	3
Twenty-second avenue	Eighty-sixth and Sixtieth streets	....	....	....	....	6,873	225	....	....	....	....	10	3	14	14
Thirty-ninth street	New Utrecht and Ninth avenues	....	....	....	....	....	460	....	....	....	....	....	2	....	1
Twenty-first street	Second and Third avenues	....	....	....	....	....	228	....	....	....	....	....	1	....	1
Union street	New York and Kingston avenues	....	....	....	....	....	1,073	....	....	....	....	....	2	....	4
Vesta avenue	Liberty and Sutter avenues	....	....	....	....	....	....	1,898	....	....	....	....	....	4	4
West Twenty-third street	Neptune and Surf avenues	....	....	....	....	....	....	1,573	....	....	....	....	....	3	3
Windsor place	Eighth and Ninth avenues	....	....	....	....	....	474	....	....	....	....	....	1	....	2
Williams avenue	Sutter and Riverdale avenues	....	....	....	....	....	....	2,237	....	....	....	....	....	3	4
Wierfield street	Hamburg and Knickerbocker avenues	....	....	....	....	....	667	....	....	....	....	....	1	....	3
West Seventeenth street	Neptune and Mermaid avenues	....	....	....	....	....	....	760	....	....	....	....	....	1	3
West Seventh street	Avenue U and Avenue T	....	....	....	....	....	....	460	....	....	....	....	....	1	2
West Fifth street	Avenue O and Avenue P	....	....	....	....	....	....	924	....	....	....	....	....	2	2
West Sixth street	Avenue O and Avenue P	....	....	....	....	....	....	924	....	....	....	....	....	2	2
		13,905	2,100	102	486	21,685	60,179	40,313	4	2	1	46	157	137	338

TABLE No. 22.

Water Mains Laid and Gates and Hydrants Set During 1904.

Street.	Between.	Linear Feet of Pipe Laid. 48-inch.	42-inch.	36-inch.	30-inch.	24-inch.	20-inch.	16-inch.	12-inch.	8-inch.	6-inch.	4-inch.
Atlantic avenue	South Elliott place to Flatbush avenue	....	....	....	....	....	....	....	....	....	....	260
Atlantic avenue	Nevins street to Flatbush avenue	....	....	....	....	....	....	1,607	....	....	72	....
Atlantic avenue	Clinton street to Furman street	....	....	....	1,503	256	....	....	117	103	2	1
Atlantic avenue	Stone avenue to Sackman street	....	....	....	....	....	....	....	540	....	....	....
Atlantic avenue	Ridgewood Engine House to Fountain avenue	237	13	6	....	....	30	....	14	....	....	....
Avenue I	East Seventeenth street to Ocean avenue	....	....	....	....	....	....	....	....	785	....	....
Avenue K	East Sixteenth street to East Eighteenth street	....	....	....	....	....	....	....	....	436	....	....
Avenue M	Coney Island avenue to Ocean avenue	....	....	....	....	....	....	....	....	1,520	....	....
Avenue N	Ocean parkway to Gravesend avenue	....	....	....	....	....	....	....	1,421	....	....	....
Avenue Q	East Sixteenth street to East Seventeenth street	....	....	....	....	....	....	....	....	270	....	....
Avenue Q	East Twenty-fourth to East Twenty-fifth street	....	....	....	....	....	....	....	....	199	....	....
Avenue R	East Sixteenth to East Eighteenth street	....	....	....	....	....	....	....	511	....	....	....
Avenue S	Homecrest avenue to East Seventeenth street	....	....	....	....	....	....	....	....	1,304	....	....
Broadway	Myrtle avenue to Park avenue	1,200	....	24	42	....	....	....	6	....	....	....
Broadway	Park avenue to Sumner place	1	....	843	....	....	38	....	....	....	19	....
Broadway	Patchen avenue to Myrtle avenue	....	....	....	....	....	2,508	....	17	688	108	....
Broadway	Sumner avenue to Rutledge street	....	....	....	....	....	3,402	....	8	704	159	....
Bond street	Livingston street to Butler street	....	....	....	....	....	2,570	....	119	321	135	....
Bond street	Fulton street to Livingston street	....	....	....	....	448	....	....	4	....	....	....
Boerum place	Fulton street to Livingston street	....	....	....	....	....	....	281	....	....	8	....
Boerum place	Fulton street to Atlantic avenue	....	....	....	....	7	....	....	1,158	119	41	....
Bush street	Sullivan street to Smith street	....	....	....	....	....	3,133	....	136	142	144	....
Bay Ridge avenue	Third avenue to Fort Hamilton avenue	....	....	....	....	....	....	....	1,372	....	779	....
Bath avenue	Bay Thirty-eighth street to Twenty-fifth avenue	....	....	....	....	....	....	....	....	259	....	....
Benson avenue	Twentieth avenue to Twenty-fifth avenue	....	....	....	....	....	....	....	....	3,886	....	....
Bay Twenty-fourth street	Bath avenue to Cropsey avenue	....	....	....	....	....	....	....	....	....	600	....
Bay Thirty-first street	Cropsey avenue to Eighty-sixth street	....	....	....	....	....	....	....	....	2,156	....	....
Bay Thirty-fifth street	Cropsey avenue to Eighty-sixth street	....	....	....	....	....	....	....	....	....	1,765	....
Bay Thirty-sixth street	Eighty-sixth street to Bath avenue	....	....	....	....	....	....	....	....	1,598	....	....
Bay Thirty-seventh street	Benson avenue to Eighty-sixth street	....	....	....	....	....	....	....	....	....	782	....
Bay Thirty-eighth street	Eighty-sixth street to Bath avenue	....	....	....	....	....	....	....	....	....	1,626	....
Conover street	William street to Erie Basin	....	....	....	....	....	2,382	....	32	395	142	....
Cumberland street	Flushing avenue to Atlantic avenue	....	....	....	....	....	5,811	....	143	401	105	....
Calyer street	Franklin street to West street	....	....	....	....	....	456	....	....	18	15	....
Commercial street	Franklin street to Manhattan avenue	....	....	....	....	....	1,040	....	21	149	90	....
Classon avenue	Hewes street to Atlantic avenue	....	....	....	....	....	7,679	....	462	564	273	....
Columbia street	Atlantic avenue to Harrison street	....	....	....	....	....	1,541	....	70	264	82	....
Dean street	Howard avenue to Saratoga avenue	....	....	....	....	....	....	....	....	815	....	....

Street.	Between.	Linear Feet of Pipe Laid.										
		48-inch.	42-inch.	36-inch.	30-inch.	24-inch.	20-inch.	16-inch.	12-inch.	8-inch.	6-inch.	4-inch.
Diamond street	Meserole street to Norman avenue	....	....	....	....	....	....	....	....	700	....	....
East New York avenue	Manhattan Crossing to Pitkin avenue	5,037	....	....	....	....	73	....	12	....	....	....
Eastern parkway	Pitkin avenue to Mt. Prospect Reservoir	13,177	....	437	97	....	....	....	....	....	....	....
Eastern parkway	New York avenue to Albany avenue	....	....	....	....	....	....	....	452	1,518	....	....
Eastern parkway	Hopkinson avenue to Sterling place	....	....	....	....	....	....	....	....	780	....	....
East Seventh street	Avenue M to Avenue N	....	....	....	....	....	....	....	....	....	413	....
East Thirteenth street	Avenue S to Avenue T	....	....	....	....	....	....	....	....	....	887	....
East Fourteenth street	Avenue S to Avenue T	....	....	....	....	....	....	....	....	....	980	....
East Fifteenth street	Avenue S to Avenue T	....	....	....	....	....	....	....	....	....	1,044	....
East Sixteenth street	Avenue S to Avenue T	....	....	....	....	....	....	....	....	....	1,133	....
East Sixteenth street	King's highway to Avenue R	....	....	....	....	....	....	....	....	....	1,102	....
East Sixteenth street	Avenue J to south of Avenue K	....	....	....	....	....	....	....	....	....	1,188	....
East Seventeenth street	Avenue S to Avenue T	....	....	....	....	....	....	....	....	....	884	....
East Seventeenth street	Avenue N to Avenue O	....	....	....	....	....	....	....	....	....	1,134	....
East Seventeenth street	Avenue Q to Avenue R	....	....	....	....	....	....	....	....	....	910	....
East Seventeenth street	Avenue I to to 250 feet south of Avenue K	....	....	....	....	....	....	....	....	....	1,920	....
East Eighteenth street	Avenue J to Manhattan Railroad	....	....	....	....	....	....	....	....	....	1,268	....
East Nineteenth street	Avenue J to Manhattan Railroad	....	....	....	....	....	....	....	....	....	1,386	....
East Twenty-fifth street	Avenue Q to Avenue R	....	....	....	....	....	....	....	....	374	....	....
Eighth street	Eighth avenue to Ninth avenue	....	....	....	....	....	....	....	....	760	....	....
Eighteenth street	Second avenue to Third avenue	....	....	....	....	....	....	....	....	443	....	....
Eightieth street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	....	3,022	....
Eighty-first street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	....	3,032	....
Eighty-second street	Twelfth avenue to Thirteenth avenue	....	....	....	....	....	....	....	....	763	....	....
Eighty-second street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	....	3,034	....
Eighty-second street	Tenth avenue to Eleventh avenue	....	....	....	....	....	....	....	....	....	726	....
Eighty-third street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	....	3,050	....
Eighty-fourth street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	....	3,075	....
Eighty-fifth street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	....	3,090	....
Eighty-fifth street	Sixteenth avenue to Seventeenth avenue	....	....	....	....	....	....	....	....	....	831	....
Eighty-seventh street	Third avenue to Fourth avenue	....	....	....	....	....	....	....	....	....	728	....
Eleventh avenue	Seventy-ninth street to Eighty-third street	....	....	....	....	....	....	....	....	1,075	....	....
Etna street	Nichols avenue to Grant avenue	....	....	....	....	....	....	....	....	328	....	....
East New York Reservoir	....	....	....	....	....	....	1,155	....	....	....	....	....
Eagle street	West street to Franklin street	....	....	....	....	....	475	....	....	19	21	....
Elm place	Fulton street to Livingston street	....	....	....	....	....	....	....	15	337	32	....
Flushing avenue	Hudson avenue to Classon avenue	....	....	....	....	....	5,433	....	12	240	304	....
Furman street	Atlantic avenue to Fulton street	....	....	....	....	4,394	....	....	75	67	272	....
Fourth street	Bond street to Smith street	....	....	....	....	....	1,194	....	....	59	50	....
Forty-first street	Sixth avenue to Seventh avenue	....	....	....	....	....	....	....	....	842	....	....
Forty-seventh street	Sixth avenue to Seventh avenue	....	....	....	....	....	....	....	....	726	....	....
Fifty-seventh street	Ninth avenue to Fort Hamilton avenue	....	....	....	....	....	....	....	....	751	....	....
Fifty-seventh street	Fifteenth avenue to Sixteenth avenue	....	....	....	....	....	....	....	....	757	....	....
Fifty-eighth street	Fifteenth avenue to Sixteenth avenue	....	....	....	....	....	....	....	....	757	....	....
Fifty-eighth street	Ninth avenue to Fort Hamilton avenue	....	....	....	....	....	....	....	....	725	....	....
Fourth avenue	Eighty sixth street to Ninety-fifth street	....	....	....	....	....	....	....	....	2,651	....	....
Freeman street	Provost street to 47 feet west of Provost street	....	....	....	....	....	....	....	....	....	191	....
Franklin avenue	DeGraw street to Eastern parkway	....	....	....	....	....	....	....	....	278	....	....
Flatbush avenue	Park place to Atlantic avenue	....	....	....	....	....	....	2,876	37	....	52	....
Fulton street	Boerum place to Main street	....	....	....	....	....	....	3,387	....	....	135	....
Front street	Main street to Flint street	....	....	....	....	....	....	58	....	....	....	....
*Grove street	Hamburg avenue to Knickerbocker avenue	....	....	....	....	....	....	....	....	721	....	....
Grant street	Jamaica avenue to Etna street	....	....	....	....	....	....	....	....	1,026	....	....
Gravesend avenue	Avenue I to Avenue P	....	....	....	....	....	6,495	....	....	....	....	....
Gold street	Water street to Fulton street	....	....	....	....	4,707	28	....	3	493	174	....
Grove place	....	....	....	....	....	....	....	....	....	282	7	....
Gallatin place	Fulton street to Livingston street	....	....	....	....	....	....	....	4	346	14	....
Hanover place	Fulton street to Livingston street	....	....	....	....	....	....	....	....	361	12	....
Harrison street	Van Brunt street to Columbia street	....	....	....	....	....	679	....	....	....	31	....
Homecrest avenue	Avenue S to Avenue T	....	....	....	....	....	....	....	....	....	878	....
Hopkinson avenue	East New York avenue to Eastern parkway	....	....	....	....	....	....	....	....	155	....	....
Humboldt street	Devoe street to Broadway	....	....	....	4,047	1,104	67	....	....	....	946	....
Imlay street	William street to Hamilton avenue	....	....	....	....	....	2,211	....	....	225	68	....
India street	Oakland street to Provost street	....	....	....	....	....	....	....	....	....	312	....
Johnson avenue	Varick avenue to Flushing avenue	....	....	....	....	....	....	....	1,521	....	....	....
Kingston avenue	Douglass street to Eastern parkway	....	....	....	....	....	....	....	....	610	....	....
Kent avenue	Hewes street to Calyer street	....	....	....	....	....	11,076	160	83	928	511	....
Knickerbocker avenue	Schaeffer street to Putnam avenue	....	....	....	....	....	2,038	....	....	354	109	....
Livingston street	Flatbush avenue to Bond street	....	....	....	....	....	....	....	1,090	....	44	....
Livingston street	Nevins street to Boerum place	....	....	....	....	....	....	2,540	....	....	61	....
Livingston street	Bond street to Clinton street	....	....	....	....	2,974	48	....	28	96	23	....
Lorraine street	Court street, running east	....	....	....	....	....	....	....	....	....	60	....
Manhattan Crossing	East New York avenue intersection	45	....	....	....	....	....	....	31	....	....	....
Myrtle avenue	Broadway to Cypress avenue	8,122	....	....	....	....	65	....	59	....	....	....
Myrtle avenue	Gold street to Hudson avenue	....	....	....	....	....	710	....	....	160	25	....
Morgan avenue	Stagg street to Metropolitan avenue	....	....	....	....	....	....	1,427	....	....	....	....
Main street	Fulton street to Water street	....	....	....	....	....	....	1,009	....	....	33	....
Nevins street	Flatbush avenue to Atlantic avenue	....	....	....	....	....	....	....	1,041	53	37	....
Nevins street	Livingston street to Atlantic avenue	....	....	....	....	....	....	792	....	....	32	....
Nassau street	Gold street to Hudson avenue	....	....	....	....	....	463	....	60	....	26	....
New Utrecht avenue	Sixty-seventh street to Seventy-fifth street	....	....	....	....	....	....	....	....	2,101	....	....

Street.	Between.	Linear Feet of Pipe Laid. 48-inch.	42-inch.	36-inch.	30-inch.	24-inch.	20-inch.	16-inch.	12-inch.	8-inch.	6-inch.	4-inch.
North Seventh street	Kent avenue to Union avenue	....	....	....	....	3,646	39	46	187	99	151	....
Ninth avenue	Fifty-seventh street to Fifty-eighth street	....	....	....	....	....	....	....	....	267	....	....
Ninety-fourth street	Second avenue to Fourth avenue	....	....	....	....	....	....	....	....	1,541	....	....
Ninety-fifth street	Second avenue to Fourth avenue	....	....	....	....	....	....	....	....	1,535	....	....
Ninety-seventh street	Third avenue to Fourth avenue	....	....	....	....	....	....	....	....	....	667	....
Ninety-ninth street	Fourth avenue to Fort Hamilton avenue	....	....	....	....	....	....	....	....	....	594	....
Provost street	Freeman street to Greene street	....	....	....	....	....	....	....	247	....	....	....
Pitkin avenue	Berriman street to Montauk avenue	....	....	....	....	....	....	....	....	598	....	....
Powell street	Pitkin avenue to Sutter avenue	....	....	....	....	....	....	....	....	983	....	....
Park avenue	Classon avenue to Broadway	....	....	....	6,295	4	199	53	....	737	262	....
Pierrepont street	Fulton street to Hicks street	....	....	....	....	....	....	1,482	....	22	86	....
Red Hook lane	Fulton street to Livingston street	....	....	....	....	....	....	....	4	373	11	....
Raymond street	Myrtle avenue to Willoughby street	....	....	....	....	....	523	....	....	54	13	....
Riverdale avenue	Thatford street to Osborn street	....	....	....	....	....	....	....	....	475	....	....
Rogers avenue	DeGraw street to Eastern parkway	....	....	....	....	....	....	....	....	....	251	....
Ralph avenue	DeGraw street to Eastern parkway	....	....	....	....	....	....	....	245	45	....	....
St. Marks avenue	Saratoga avenue to Howard avenue	....	....	....	....	....	....	....	....	767	....	....
St. Marks avenue	Hopkinson avenue to Rockaway avenue	....	....	....	....	....	....	....	....	534	....	....
Sterling place	Troy avenue to Schenectady avenue	....	....	....	....	....	....	....	....	805	....	....
Sunnyside avenue	Miller avenue to Highland avenue	....	....	....	....	....	....	....	....	....	642	....
Sherlock place	Herkimer street to Atlantic avenue	....	....	....	....	....	....	....	....	....	383	....
Seventh street	Second avenue to Third avenue	....	....	....	....	....	....	....	....	805	....	....
Sixty-eighth street	Sixteenth avenue to 139 feet east of Sixteenth avenue	....	....	....	....	....	....	....	....	139	....	....
Sixty-ninth street	New Utrecht avenue to Eleventh avenue	....	....	....	....	....	....	....	....	597	....	....
Seventieth street	New Utrecht avenue to east of Eleventh avenue	....	....	....	....	....	....	....	....	529	....	....
Seventy-first street	New Utrecht avenue to Eleventh avenue	....	....	....	....	....	....	....	....	368	....	....
Seventy-first street	Narrows avenue to Shore road	....	....	....	....	....	....	....	....	531	....	....
Seventy-second street	New Utrecht avenue to Eleventh avenue	....	....	....	....	....	....	....	....	248	....	....
Seventy-third street	New Utrecht avenue to Eleventh avenue	....	....	....	....	....	....	....	....	171	....	....
Seventy-third street	First avenue to Second avenue	....	....	....	....	....	....	....	....	726	....	....
Seventy-sixth street	Fifth avenue to Sixth avenue	....	....	....	....	....	....	....	....	812	30	....
Seventy-ninth street	First avenue to Shore road	....	....	....	....	....	....	....	....	1,262	....	....
Seventy-ninth street	Eighteenth avenue to Twenty-first avenue	....	....	....	....	....	....	....	....	....	2,253	....
Seventeenth avenue	Eighty-fifth street to Eighty-sixth street	....	....	....	....	....	....	....	....	272	....	....
Sullivan street	Conover street to Bush street	....	....	....	....	....	1,532	....	62	123	61	....
Smith street	Fourth street to Huntington street	....	....	....	....	....	1,069	....	78	184	33	....
Smith street	Fulton street to Atlantic avenue	....	....	....	....	7	1,117	....	113	....	80	....
St. Edwards street	Flushing avenue to Myrtle avenue	....	....	....	....	....	1,726	....	....	233	78	....
Sumner avenue	Fulton street to Willoughby avenue	....	....	....	....	....	5,530	....	....	38	437	....
Schermerhorn street	Flatbush avenue to Boerum place	....	....	....	....	....	....	....	3,355	....	140	....
Tillary street	Gold street to Adams street	....	....	....	....	....	1,593	....	....	191	40	....
Truxton street	Sackman street to Conway street	....	....	....	....	....	....	....	....	60	....	....
Thirteenth street	Second avenue to 300 feet west of Second avenue	....	....	....	....	....	....	....	....	....	305	....
Troy avenue	St. John's place to Sterling place	....	....	....	....	....	....	....	....	360	....	....
Third avenue	Ninety-first street to Ninety-second street	....	....	....	....	....	....	....	....	414	....	....
Twelfth avenue	Eighty-second street to Eighty-third street	....	....	....	....	....	....	....	....	261	....	....
Twentieth avenue	Seventy-ninth street to Eighty-sixth street	....	....	....	....	....	....	....	1,863	....	....	....
Twenty-first avenue	Seventy-sixth street to Eighty-fourth street	....	....	....	....	....	....	....	....	2,062	....	....
Twenty-third avenue	Bath avenue to Cropsey avenue	....	....	....	....	....	....	....	....	719	....	....
Twenty-fifth avenue	Harway avenue to Warehouse avenue	....	....	....	....	....	....	....	....	682	....	....
Union street	Bond street to Court street	....	....	....	....	....	1,959	....	70	121	63	....
Van Brunt street	Harrison street to President street	....	....	....	....	....	1,605	....	....	341	96	....
William street	Conover street to Imlay street	....	....	....	....	....	209	....	....	47	11	....
West street	Calyer street to Kent street	....	....	....	....	....	1,340	....	25	84	99	....
Water street	Main street to Dock street	....	....	....	....	....	....	703	....	....	18	....
Water street	Fulton street to Gold street	....	....	....	....	3,222	16	....	33	177	152	....
Willoughby street	Adams street to Hudson avenue	....	....	....	....	....	10	....	2,343	306	53	....
West Seventeenth street	Neptune avenue to Harway avenue	....	....	....	....	....	....	....	....	....	644	....
West Thirteenth street	Avenue R to Avenue S	....	....	....	....	....	....	....	....	....	800	....
West Twenty-ninth street	Surf avenue to New York and Coney Island Railroad	....	....	....	....	....	....	....	....	....	320	....
Warwick street	Jamaica avenue to Arlington avenue	....	....	....	....	....	....	....	....	817	....	....
Yard—Ridgewood Engine House	North side	....	....	....	135	....	....	....	....	....	....	....
*Franklin street	Eagle street to Commercial street	....	....	....	....	....	526	....	31	46	26	....
		27,818	13	1,310	12,119	20,769	81,792	16,421	19,330	62,518	55,041	260

TABLE No. 22.

Water Mains Laid and Gates and Hydrants Set During 1904.

Street.	Between.	Gates Set. 48-inch.	36-inch.	30-inch.	24-inch.	20-inch.	16-inch.	12-inch.	8-inch.	6-inch.	Hydrants Set.
Atlantic avenue	South Elliott place to Flatbush avenue	....	....	....	....	....	....	1	....	....	....
Atlantic avenue	Nevins street to Flatbush avenue	....	....	....	....	....	....	....	....	8	8
Atlantic avenue	Clinton street to Furman street	....	....	2	....	....	....	2	3	1	....
Atlantic avenue	Stone avenue to Sackman street	....	....	....	....	....	....	1	....	....	2
Atlantic avenue	Ridgewood Engine House to Fountain avenue	....	1	....	....	2	....	1	....	....	....
Avenue I	East Seventeenth street to Ocean avenue	....	....	....	....	....	....	....	2	....	3
Avenue K	East Sixteenth street to East Eighteenth street	....	....	....	....	....	....	....	1	....	2
Avenue M	Coney Island avenue to Ocean avenue	....	....	....	....	....	....	....	6	....	5

Street.	Between.	Gates Set.									Hydrants Set.
		48-inch.	36-inch.	30-inch.	24-inch.	20-inch.	16-inch.	12-inch.	8-inch.	6-inch.	
Avenue N	Ocean parkway to Gravesend avenue	....	....	....	....	....	....	4	....	5	5
Avenue Q	East Sixteenth street to East Seventeenth street	....	....	....	....	....	....	....	1	....	1
Avenue Q	East Twenty-fourth to East Twenty-fifth street	....	....	....	....	....	....	....	1	....	1
Avenue R	East Sixteenth to East Eighteenth street	....	....	....	....	....	....	1	....	....	2
Avenue S	Homecrest avenue to East Seventeenth street	....	....	....	....	....	....	....	3	....	5
Broadway	Myrtle avenue to Park avenue	....	1	2	....	....	....	2	....	....	....
Broadway	Park avenue to Sumner place	....	....	....	....	1	....	....	....	....	....
Broadway	Patchen avenue to Myrtle avenue	....	....	....	....	4	....	1	13	9	7
Broadway	Sumner avenue to Rutledge street	....	....	....	....	6	....	....	17	13	13
Bond street	Livingston street to Butler street	....	....	....	....	6	....	6	13	15	14
Bond street	Fulton street to Livingston street	....	....	....	....	1	....	1	....	....	....
Boerum place	Fulton street to Livingston street	....	....	....	....	....	1	....	....	2	2
Boerum place	Fulton street to Atlantic avenue	....	....	....	....	....	....	6	3	5	5
Bush street	Sullivan street to Smith street	....	....	....	....	4	....	3	4	16	16
Bay Ridge avenue	Third avenue to Fort Hamilton avenue	....	....	....	....	....	....	6	....	12	12
Bath avenue	Bay Thirty-eighth street to Twenty-fifth avenue	....	....	....	....	....	....	....	1	....	1
Benson avenue	Twentieth avenue to Twenty-fifth avenue	....	....	....	....	....	....	....	15	....	15
Bay Twenty-fourth street	Bath avenue to Cropsey avenue	....	....	....	....	....	....	....	....	1	2
Bay Thirty-first street	Cropsey avenue to Eighty-sixth street	....	....	....	....	....	....	....	5	....	6
Bay Thirty-fifth street	Cropsey avenue to Eighty-sixth street	....	....	....	....	....	....	....	....	2	5
Bay Thirty-sixth street	Eighty-sixth street to Bath avenue	....	....	....	....	....	....	....	1	....	4
Bay Thirty-seventh street	Benson avenue to Eighty-sixth street	....	....	....	....	....	....	....	....	2	2
Bay Thirty-eighth street	Eighty-sixth street to Bath avenue	....	....	....	....	....	....	....	....	3	4
Conover street	William street to Erie Basin	....	....	....	....	5	....	1	13	14	14
Cumberland street	Flushing avenue to Atlantic avenue	....	....	....	....	12	....	8	7	26	26
Calyer street	Franklin street to West street	....	....	....	....	....	....	....	1	2	2
Commercial street	Franklin street to Manhattan avenue	....	....	....	....	3	....	....	4	10	7
Classon avenue	Hewes street to Atlantic avenue	....	....	....	....	16	....	11	17	41	38
Columbia street	Atlantic avenue to Harrison street	....	....	....	....	3	....	2	7	7	7
Dean street	Howard avenue to Saratoga avenue	....	....	....	....	....	....	....	1	....	2
Diamond street	Meserole street to Norman avenue	....	....	....	....	....	....	....	2	1	2
East New York avenue	Manhattan Crossing to Pitkin avenue	....	2	3	....	2	....	2	....	....	....
Eastern parkway	Pitkin avenue to Mt. Prospect Reservoir	....	4	....	....	....	....	4	....	....	....
Eastern parkway	New York avenue to Albany avenue	....	....	....	....	....	....	1	3	2	8
Eastern parkway	Hopkinson avenue to Sterling place	....	....	....	....	....	....	....	2	....	2
East Seventh street	Avenue M to Avenue N	....	....	....	....	....	....	....	....	1	2
East Thirteenth street	Avenue S to Avenue T	....	....	....	....	....	....	....	....	2	2
East Fourteenth street	Avenue S to Avenue T	....	....	....	....	....	....	....	....	3	2
East Fifteenth street	Avenue S to Avenue T	....	....	....	....	....	....	....	....	3	2
East Sixteenth street	Avenue S to Avenue T	....	....	....	....	....	....	....	....	3	2
East Sixteenth street	King's highway to Avenue R	....	....	....	....	....	....	....	....	3	3
East Sixteenth street	Avenue J to south of Avenue K	....	....	....	....	....	....	....	....	3	3
East Seventeenth street	Avenue S to Avenue T	....	....	....	....	....	....	....	....	2	2
East Seventeenth street	Avenue N to Avenue O	....	....	....	....	....	....	....	....	1	2
East Seventeenth street	Avenue Q to Avenue R	....	....	....	....	....	....	....	....	2	2
East Seventeenth street	Avenue I to to 250 feet south of Avenue K	....	....	....	....	....	....	....	....	4	5
East Eighteenth street	Avenue J to Manhattan Railroad	....	....	....	....	....	....	....	....	3	3
East Nineteenth street	Avenue J to Manhattan Railroad	....	....	....	....	....	....	....	....	3	3
East Twenty-fifth street	Avenue Q to Avenue R	....	....	....	....	....	....	....	....	....	1
Eighth street	Eighth avenue to Ninth avenue	....	....	....	....	....	....	....	1	3	3
Eighteenth street	Second avenue to Third avenue	....	....	....	....	....	....	....	1	....	2
Eightieth street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	6	8
Eighty-first street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	6	8
Eighty-second street	Twelfth avenue to Thirteenth avenue	....	....	....	....	....	....	....	1	....	2
Eighty-second street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	6	8
Eighty-second street	Tenth avenue to Eleventh avenue	....	....	....	....	....	....	....	....	1	2
Eighty-third street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	6	8
Eighty-fourth street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	6	8
Eighty-fifth street	Eighteenth avenue to Twenty-second avenue	....	....	....	....	....	....	....	....	6	8
Eighty-fifth street	Sixteenth avenue to Seventeenth avenue	....	....	....	....	....	....	....	....	2	2
Eighty-seventh street	Third avenue to Fourth avenue	....	....	....	....	....	....	....	....	1	2
Eleventh avenue	Seventy-ninth street to Eighty-third street	....	....	....	....	....	....	....	3	....	4
Etna street	Nichols avenue to Grant avenue	....	....	....	....	....	....	....	1	....	1
East New York Reservoir	.....	....	....	....	....	3	....	....	....	2	1
Eagle street	West street to Franklin street	....	....	....	....	....	....	....	....	2	2
Elm place	Fulton street to Livingston street	....	....	....	....	....	....	1	2	....	2
Flushing avenue	Hudson avenue to Classon avenue	....	....	....	....	6	....	....	3	26	23
Furman street	Atlantic avenue to Fulton street	....	....	....	5	....	....	3	4	23	21
Fourth street	Bond street to Smith street	....	....	....	....	2	....	....	2	5	5
Forty-first street	Sixth avenue to Seventh avenue	....	....	....	....	....	....	....	1	....	3
Forty-seventh street	Sixth avenue to Seventh avenue	....	....	....	....	....	....	....	1	....	3
Fifty-seventh street	Ninth avenue to Fort Hamilton avenue	....	....	....	....	....	....	....	1	....	2
Fifty-seventh street	Fifteenth avenue to Sixteenth avenue	....	....	....	....	....	....	....	1	....	2
Fifty-eighth street	Fifteenth avenue to Sixteenth avenue	....	....	....	....	....	....	....	1	....	2
Fifty-eighth street	Ninth avenue to Fort Hamilton avenue	....	....	....	....	....	....	....	....	....	2
Fourth avenue	Eighty-sixth street to Ninety-fifth street	....	....	....	....	....	....	....	6	....	7
Freeman street	Provost street to 47 feet west of Provost street	....	....	....	....	....	....	....	....	1	....
Franklin avenue	DeGraw street to Eastern parkway	....	....	....	....	....	....	....	2	....	1
Flatbush avenue	Park place to Atlantic avenue	....	....	....	....	....	3	2	....	12	12
Fulton street	Boerum place to Main street	....	....	....	....	....	3	....	....	17	17

Street.	Between.	Gates Set. 48-inch.	36-inch.	30-inch.	24-inch.	20-inch.	16-inch.	12-inch.	8-inch.	6-inch.	Hydrants Set.
Front street	Main street to Flint street	....	....	....	....	....	1	....	....	....	....
*Grove street	Hamburg avenue to Knickerbocker avenue	....	....	....	....	....	....	....	1	....	2
Grant street	Jamaica avenue to Etna street	....	....	....	....	....	....	....	1	....	3
Gravesend avenue	Avenue I to Avenue P	....	....	....	....	9	....	1	....	20	20
Gold street	Water street to Fulton street	....	....	....	10	....	....	....	16	21	21
Grove place	....	....	....	....	....	....	....	....	....	....	1
Gallatin place	Fulton street to Livingston street	....	....	....	....	....	....	....	2	....	2
Hanover place	Fulton street to Livingston street	....	....	....	....	....	....	....	2	....	1
Harrison street	Van Brunt street to Columbia street	....	....	....	....	2	....	....	....	4	3
Homecrest avenue	Avenue S. to Avenue T	....	....	....	....	....	....	....	....	1	2
Hopkinson avenue	East New York avenue to Eastern parkway	....	....	....	....	....	....	....	1	....	....
Humboldt street	Devoe street to Broadway	....	....	4	3	2	....	....	....	50	11
Imlay street	William street to Hamilton avenue	....	....	....	....	4	....	....	7	11	11
India street	Oakland street to Provost street	....	....	....	....	....	....	....	....	....	2
Johnson avenue	Varick avenue to Flushing avenue	....	....	....	....	....	....	3	....	7	7
Kingston avenue	Douglass street to Eastern parkway	....	....	....	....	....	....	....	3	....	2
Kent avenue	Hewes street to Calyer street	....	....	....	....	22	2	4	25	65	57
Knickerbocker avenue	Schaeffer street to Putnam avenue	....	....	....	....	2	....	....	7	13	12
Livingston street	Flatbush avenue to Bond street	....	....	....	....	....	....	4	....	6	5
Livingston street	Nevins street to Boerum place	....	....	....	....	....	2	....	....	14	14
Livingston street	Bond street to Clinton street	....	....	....	1	2	....	2	5	2	....
Lorraine street	Court street, running east	....	....	....	....	....	....	....	....	1	....
Manhattan Crossing	East New York avenue intersection	....	....	....	....	....	....	1	....	....	....
Myrtle avenue	Broadway to Cypress avenue	....	3	....	....	2	....	3	....	....	....
Myrtle avenue	Gold street to Hudson avenue	....	....	....	....	3	....	....	5	3	3
Morgan avenue	Stagg street to Metropolitan avenue	....	....	....	....	....	4	....	1	5	4
Main street	Fulton street to Water street	....	....	....	....	....	1	....	....	7	6
Nevins street	Flatbush avenue to Atlantic avenue	....	....	....	....	....	....	3	2	4	4
Nevins street	Livingston street to Atlantic avenue	....	....	....	....	....	1	....	....	3	3
Nassau street	Gold street to Hudson avenue	....	....	....	....	1	....	2	....	2	2
New Utrecht avenue	Sixty-seventh street to Seventy-fifth street	....	....	....	....	....	....	....	5	....	4
North Seventh street	Kent avenue to Union avenue	....	....	....	5	2	1	5	3	17	16
Ninth avenue	Fifty-seventh street to Fifty-eighth street	....	....	....	....	....	....	....	1	....	1
Ninety-fourth street	Second avenue to Fourth avenue	....	....	....	....	....	....	....	3	....	4
Ninety-fifth street	Second avenue to Fourth avenue	....	....	....	....	....	....	....	3	....	4
Ninety-seventh street	Third avenue to Fourth avenue	....	....	....	....	....	....	....	....	1	2
Ninety-ninth street	Fourth avenue to Fort Hamilton avenue	....	....	....	....	....	....	....	....	2	2
Provost street	Freeman street to Greene street	....	....	....	....	....	....	....	....	1	1
Pitkin avenue	Berriman street to Montauk avenue	....	....	....	....	....	....	....	2	....	2
Powell street	Pitkin avenue to Sutter avenue	....	....	....	....	....	....	....	2	....	4
Park avenue	Classon avenue to Broadway	....	....	3	....	4	1	....	27	25	22
Pierrepont street	Fulton street to Hicks street	....	....	....	....	....	2	1	4	9	9
Red Hook lane	Fulton street to Livingston street	....	....	....	....	....	....	....	2	....	2
Raymond street	Myrtle avenue to Willoughby street	....	....	....	....	3	....	....	2	2	2
Riverdale avenue	Thatford street to Osborn street	....	....	....	....	....	....	....	1	2	1
Rogers avenue	DeGraw street to Eastern parkway	....	....	....	....	....	....	....	....	2	1
Ralph avenue	DeGraw street to Eastern parkway	....	....	....	....	....	....	....	1	1	1
St. Marks avenue	Saratoga avenue to Howard avenue	....	....	....	....	....	....	....	2	....	2
St. Marks avenue	Hopkinson avenue to Rockaway avenue	....	....	....	....	....	....	....	....	....	1
Sterling place	Troy avenue to Schenectady avenue	....	....	....	....	....	....	....	2	....	3
Sunnyside avenue	Miller avenue to Highland avenue	....	....	....	....	....	....	....	....	1	2
Sherlock place	Herkimer street to Atlantic avenue	....	....	....	....	....	....	....	....	2	1
Seventh street	Second avenue to Third avenue	....	....	....	....	....	....	....	2	....	3
Sixty-eighth street	Sixteenth avenue to 139 feet east of Sixteenth avenue	....	....	....	....	....	....	....	1	....	....
Sixty-ninth street	New Utrecht avenue to Eleventh avenue	....	....	....	....	....	....	....	1	....	2
Seventieth street	New Utrecht avenue to east of Eleventh avenue	....	....	....	....	....	....	....	1	....	1
Seventy-first street	New Utrecht avenue to Eleventh avenue	....	....	....	....	....	....	....	1	....	1
Seventy-first street	Narrows avenue to Shore road	....	....	....	....	....	....	....	2	....	2
Seventy-second street	New Utrecht avenue to Eleventh avenue	....	....	....	....	....	....	....	1	....	....
Seventy-third street	New Utrecht avenue to Eleventh avenue	....	....	....	....	....	....	....	1	....	....
Seventy-third street	First avenue to Second avenue	....	....	....	....	....	....	....	1	....	2
Seventy-sixth street	Fifth avenue to Sixth avenue	....	....	....	....	....	....	....	1	....	2
Seventy-ninth street	First avenue to Shore road	....	....	....	....	....	....	....	1	....	4
Seventy-ninth street	Eighteenth avenue to Twenty-first avenue	....	....	....	....	....	....	....	....	5	6
Seventeenth avenue	Eighty-fifth street to Eighty-sixth street	....	....	....	....	....	....	....	1	....	1
Sullivan street	Conover street to Bush street	....	....	....	....	1	....	2	3	8	7
Smith street	Fourth street to Huntington street	....	....	....	....	2	....	....	6	5	5
Smith street	Fulton street to Atlantic avenue	....	....	....	....	3	....	6	....	7	5
St. Edwards street	Flushing avenue to Myrtle avenue	....	....	....	....	3	....	....	6	8	8
Sumner avenue	Fulton street to Willoughby avenue	....	....	....	....	11	....	....	3	35	27
Schermerhorn street	Flatbush avenue to Boerum place	....	....	....	....	....	....	13	....	15	15
Tillary street	Gold street to Adams street	....	....	....	....	5	....	....	11	7	7
Truxton street	Sackman street to Conway street	....	....	....	....	....	....	....	....	....	1
Thirteenth street	Second avenue to 300 feet west of Second avenue	....	....	....	....	....	....	....	....	1	1
Troy avenue	St. John's place to Sterling place	....	....	....	....	....	....	....	1	1	1
Third avenue	Ninety-first street to Ninety-second street	....	....	....	....	....	....	....	2	....	1
Twelfth avenue	Eighty-second street to Eighty-third street	....	....	....	....	....	....	....	1	....	1
Twentieth avenue	Seventy-ninth street to Eighty-sixth street	....	....	....	....	....	....	3	....	....	7
Twenty-first avenue	Seventy-sixth street to Eighty-fourth street	....	....	....	....	....	....	....	8	....	8
Twenty-third avenue	Bath avenue to Cropsey avenue	....	....	....	....	....	....	....	4	....	2

Street.	Between.	Gates Set. 48-inch.	36-inch.	30-inch.	24-inch.	20-inch.	16-inch.	12-inch.	8-inch.	6-inch.	Hydrants Set.
Twenty-fifth avenue	Harway avenue to Warehouse avenue	....	....	....	....	....	....	....	1	....	2
Union street	Bond street to Court street	....	....	....	....	5	....	2	3	10	9
Van Brunt street	Harrison street to President street	....	....	....	....	4	....	....	11	10	8
William street	Conover street to Imlay street	....	....	....	....	....	....	....	2	1	1
West street	Calyer street to Kent street	....	....	....	....	3	....	2	5	12	10
Water street	Main street to Dock street	....	....	....	....	....	1	....	....	4	4
Water street	Fulton street to Gold street	....	....	....	6	1	....	1	11	15	15
Willoughby street	Adams street to Hudson avenue	....	....	....	....	....	....	8	14	8	9
West Seventeenth street	Neptune avenue to Harway avenue	....	....	....	....	....	....	....	....	1	2
West Thirteenth street	Avenue R to Avenue S	....	....	....	....	....	....	....	....	1	2
West Twenty-ninth street	Surf avenue to New York and Coney Island Railroad	....	....	....	....	....	....	....	....	1	2
Warwick street	Jamaica avenue to Arlington avenue	....	....	....	....	....	....	....	2	....	3
Yard—Ridgewood Engine House	North side	....	....	1	....	....	....	....	....	....	....
*Franklin street	Eagle street to Commercial street	....	....	....	....	1	....	1	2	3	3
		....	11	15	30	173	23	137	425	823	930

TABLE No. 24.

High Pressure Fire Service Mains Laid, Gates and Hydrants Set During 1905.

Streets.	Between What Streets.	Linear Feet of Pipe Laid. 20-inch.	16-inch.	12-inch.	8-inch.	Gates Set. 20-inch.	16-inch.	12-inch.	8-inch.	Hydrants Set.
Beard street	Van Brunt street to Dwight street	....	....	1,074	69	....	....	1	10	....
Bowne street	Imlay street to Richards street	....	....	755	10	....	....	3	4	....
Coffey street	Ferris street to Van Brunt street	....	....	1,017	11	....	....	4	4	....
Commerce street	Imlay street to Richards street	....	....	755	3	....	....	3	3	....
Conover street	Coffey street to water front	....	....	1,013	21	....	....	2	5	....
Conover street	King street to William street	....	242	....	6	....	1	....	2	....
Delevan street	Richards street to Dwight street	....	....	491	8	....	....	1	2	....
Doughty street	At Furman street intersection	....	....	58	....	....	....	1	....	....
Doyle's walk	South of Surf avenue	....	....	460	22	....	....	1	3	3
Dykeman street	Ferris street to water front	....	....	798	29	....	....	1	7	....
Ferris street	Commercial wharf to Vandyke street	....	1,078	329	58	....	4	2	14	....
Furman street	State street to Fulton street	3,893	....	....	61	7	....	....	22	....
Hamilton street	Van Brunt street to Richards street	....	....	637	11	....	....	2	4	....
Hudson avenue	Myrtle avenue to Fulton street	....	....	1,601	22	....	....	6	7	....
Henderson's walk	South of Surf avenue	....	....	429	14	....	....	1	3	3
Imlay street	William street to Hamilton avenue	....	2,165	....	27	....	8	....	10	....
Kensington walk	South of Surf avenue	....	....	414	15	....	....	1	3	3
King street	Ferris street to Conover street	....	536	....	6	....	1	....	2	....
Lafayette street	Navy street to Fleet street	....	....	620	24	....	....	4	5	....
Lawrence street	Willoughby street to Fulton street	....	....	337	32	....	....	1	3	....
Neptune avenue	Pumping Station to West Twelfth street	....	116	....	....	....	....	....	....	....
President street	Columbia street to Van Brunt street	....	....	566	6	....	....	2	2	....
Richards street	Sullivan street to Verona street	....	992	....	22	....	4	....	8	....
Sewage disposal plant	Neptune avenue to Pumping Station	....	346	....	....	....	1	....	....	....
State street	Ferris street to Clinton street	1,629	....	....	31	6	....	....	11	....
Stratton's walk	South of Surf avenue	....	....	502	16	....	....	1	5	4
Sullivan street	Ferris street to Richards street	....	543	1,011	15	....	1	3	5	....
Summit street	Imlay street intersection	....	....	45	....	....	....	1	....	....
Surf avenue	West Fifth street to West Twelfth street	....	3,081	....	125	....	4	....	22	21
Thompson's walk	South of Surf avenue	....	....	377	25	....	....	1	3	3
Tillary street	Washington street to Pearl street	....	....	494	9	....	....	1	4	....
Van Brunt street	Sullivan street to Reid street	....	1,262	265	11	....	4	2	13	....
Verona street	Imlay street to Richards street	....	....	757	5	....	....	3	4	....
West Tenth street	South of Surf avenue	....	....	420	23	....	....	1	4	3
West Twelfth street	Neptune avenue to Surf avenue	....	90	....	40	....	....	....	7	7
William street	Conover street to Richards street	....	235	775	8	....	....	2	6	....
Total		5,522	10,686	16,000	785	13	28	51	207	47

TABLE No. 25.

Showing Net Amount of Water Filtered at the Baiseleys Filter Plant, and Cost of Filtration Per Million Gallons.

Month, 1905.	Net Amount of Filtered Water, U. S. Gallons.	Cost of Filtration. Inspection.	Operation.	Laboratory.	Repairs.	Interest and Sinking Fund.	Total.	Cost Per Million Gallons.
January	129,233,500	$22.15	$460.81	$28.60	$31.00	$268.22	$810.78	$6.27
February	140,456,400	22.15	342.12	28.60	28.00	268.22	689.09	4.91
March	127,588,800	22.15	393.27	28.60	31.00	268.22	743.24	5.83
April	123,625,700	22.15	324.13	28.60	30.00	268.22	673.10	5.44
May	132,230,260	42.34	339.50	39.54	56.43	268.22	746.03	5.64
June	131,700,920	45.41	354.60	37.24	49.85	268.22	755.32	5.73

Month, 1905.	Net Amount of Filtered Water, U. S. Gallons.	Cost of Filtration. Inspection.	Operation.	Laboratory.	Repairs.	Interest and Sinking Fund.	Total.	Cost Per Million Gallons.
July	111,691,300	38.18	378.54	29.65	16.50	268.22	731.09	6.54
August	105,782,900	67.19	440.51	62.69	45.00	268.22	883.61	8.35
September	60,736,580	60.10	371.86	42.39	19.50	268.22	762.07	12.54
October	106,436,700	46.73	434.33	45.02	48.00	268.22	842.30	7.91
November	140,119,300	50.05	342.77	37.20	49.50	268.22	747.74	5.34
December	125,907,100	46.20	531.64	35.55	103.00	268.22	984.61	7.66
Total.	1,435,509,460	$484.80	$4,714.08	$443.68	$507.78	$3,218.64	$9,368.98	$6.53

TABLE No. 26.

Showing Net Amount of Water Filtered at the Springfield Filter Plant, and Cost of Filtration Per Million Gallons.

Month, 1905.	Net Amount of Filtered Water, U. S. Gallons.	Cost of Filtration. Inspection.	Operation.	Laboratory.	Repairs.	Interest and Sinking Fund.	Total.	Cost Per Million Gallons.
January	57,774,840	$22.15	$276.48	$28.60	$31.00	$197.19	$555.42	$9.61
February	80,591,000	22.15	279.48	28.60	28.00	197.19	555.42	6.89
March	88,117,796	22.15	364.65	28.60	31.00	197.19	643.59	7.30
April	77,691,575	22.15	252.11	28.60	30.00	197.19	530.05	6.82
May	82,169,910	38.37	257.41	32.05	37.93	197.19	562.95	6.85
June	67.590,045	42.19	276.00	35.97	10.35	197.19	561.70	8.31
July	45,149,065	37.58	256.76	29.55	0.50	197.19	521.58	11.55
August	34,544,408	61.62	236.38	43.65	3.75	197.19	542.59	15.77
September	39,642,580	60.11	219.27	36.09	24.00	197.19	536.66	13.53
October	44,559,640	47.23	268.16	44.79	20.00	197.19	577.37	12.95
November	31,997,010	43.42	212.96	37.20	7.50	197.19	498.27	15.56
December	44,783,546	43.67	283.25	35.53	8.50	197.19	568.14	12.70
Total.	694,611,415	$462.79	$3,182.91	$409.23	$232.53	$2,366.28	$6,653.74	$9.58

TABLE No. 27.

Showing Net Amount of Water Filtered at the Hempstead Filter Beds and Cost of Filtration Per Million Gallons.

Month. 1905.	Net Amount of Filtered Water, U. S. Gallons.	Cost of Filtration. Inspection.	Laboratory.	Labor and Materials.	Interest.	Total.	Cost Per Million Gallons.
January	35,480,800	$22 15	$28 60	$6 50	$27 50	$84 75	$2 39
February	20,692,200	22 15	28 60	....	27 50	78 25	3 78
March	30,998,700	22 15	28 60	14 75	27 50	93 00	3 00
April	23,639,500	22 15	28 60	....	27 50	78 25	3 31
May	31,665 400	6 33	27 00	....	27 50	60 83	1 92
June	49,746,200	4 38	26 82	....	27 50	58 70	1 18
July	72,783,400	22 38	28 21	....	27 50	78 09	1 07
August	32,329,800	11 00	37 76	60 22	27 50	136 48	4 22
September	44,673,600	7 24	39 15	56 00	27 50	129 89	2 91
October	30,717,000	24 90	54 34	74 00	27 50	180 74	5 88
November	15,755,200	23 75	44 51	12 00	27 50	107 76	6 84
December	28,301,600	26 18	47 07	16 00	27 50	116 75	4 13
Total	416,783,400	$214 76	$419 26	$239 47	$330 00	$1,203 49	$2 89

TABLE No. 28.

Showing Net Amount of Water Filtered at the Forest Stream Filter Beds and Cost of Filtration Per Million Gallons.

Month. 1905.	Net Amount of Filtered Water, U. S. Gallons.	Cost of Filtration. Inspection.	Laboratory.	Labor and Materials.	Interest.	Total.	Cost Per Million Gallons.
January	103,418,850	$22 15	$28 60	....	$88 20	$138 95	$1 34
February	137,103,100	22 15	28 60	....	88 20	138 95	1 01
March	94,409,200	22 15	28 60	$78 00	88 20	216 95	2 30
April	109,099,400	22 15	28 60	159 00	88 20	297 95	2 73
May	68,276,290	30 25	11 68	....	88 20	130 13	1 91
June	74,441,900	17 91	14 76	....	88 20	120 87	1 62
July	105,406,700	24 81	23 18	162 00	88 20	298 19	2 83
August	74,182,000	23 26	27 16	29 00	88 20	167 62	2 26
September	76,644,000	32 63	26 42	....	88 20	147 25	1 92
October	72,727,000	47 90	44 79	165 00	88 20	345 89	4 76
November	60,635,000	42 20	37 20	117 00	88 20	284 60	4 69
December	98,988,000	41 35	35 53	....	88 20	165 08	1 67
Total	1,075,331,440	$348 91	$335 12	$710 00	$1,058 40	$2,452 43	$2 28

TABLE No. 29.

Showing Average Quality of Water for the Years 1904 and 1905 from the Two Ridgewood Reservoirs.

	1904.	1905.
Physical Examination.		
Turbidity	4	4
Color	14	14
Per cent. of samples with distinct vegetable odors	1.6	0.0
Per cent. of samples with odors of decomposition	1.7	0.4
Per cent. of samples with odor due to organisms	0.0	0.0
Chemical Examination.		
Albuminoid ammonia	0.057	0.049
Free ammonia	0.028	0.021
Nitrites	0.003	0.003
Nitrates	1.19	1.06
Total solids	74.0	69.0
Chlorine	7.9	7.2
Hardness	27.0	26.0
Alkalinity	11.0	11.0
Iron	0.33	0.44
Microscopical Examination.		
Microscopic organisms	76	31
Amorphous matter	233	231
Bacteriological Examination.		
Bacteria, per c. c	597	363
Per cent. of Positive Tests—		
For B. coli in 0.1 c. c	1.7	3.9
For B. coli in 1.0 c. c	12.1	17.6
For B. coli in 10.0 c. c	26.9	36.3

TABLE No. 30.

Showing Average Quality of the Water for the Years 1904 and 1905 from the Taps at the Laboratory, from Flushing and Clermont Avenues and from Flatbush Avenue.

	1904.	1905.
Physical Examination.		
Turbidity	4	4
Color	13	13
Per cent. of samples with distinct vegetable odors	2.6	0.1
Per cent. of samples with odors of decomposition	2.6	0.6
Per cent. or samples with odor due to organisms	3.9	0.7
Chemical Examination.		
Albuminoid ammonia	0.054	0.061
Free ammonia	0.012	0.012
Nitrites	0.003	0.003
Nitrates	1.10	1.01
Microscopical Examination.		
Microscopic organisms	743	1,329
Amorphous matter	211	234
Bacteriological Examination.		
Bacteria, per c. c	542	321
Per cent. of Positive Tests—		
For B. coli in 0.1 c. c	1.0	2.2
For B. coli in 1.0 c. c	11.0	10.0
For B. coli in 10.0 c. c	22.6	27.6

TABLE No. 31.

CONEY ISLAND HIGH PRESSURE FIRE SERVICE STATION.

Test of Gas Engines, Shops of National Meter Company.

Test for Brake Horse Power and Gas Consumption.

	Engine No. 2706. Full Load.	Engine No. 2706. Overload.	Engine No. 2707. Full Load.	Engine No. 2707. Overload.	Engine No. 2708. Full Load.	Engine No. 2708. Overload.
Date of test	April 14, 1905	April 14, 1905	April 17, 1905	April 17, 1905	April 17, 1905	April 17, 1905
Time of start	1.46½ P. M.	2.35 P. M.	10.08 A. M.	10.46 A. M.	3.42 P. M.	4.31 P. M.
Time of finish	2.16½ P. M.	3.05 P. M.	10.38 A. M.	11.16 A. M.	4.12 P. M.	5.01 P. M.
Duration of test—minutes	30	30	30	30	30	30
Average revolutions per minute	251.6	251.1	250.1	251.3	250.9	252.9
Brake circumference No. 1, side feet	48.50	48.50	48.50	48.50	48.50	48.50
Brake circumference No. 2, side feet	48.56	48.56	48.56	48.56	48.56	48.56
Brake horse-power No. 1	77.10	89.51	76.66	89.57	76.89	90.14
Brake horse-power No. 2	77.00	89.44	76.58	89.50	76.81	90.07
Total brake horse-power	154.10	178.95	153.24	179.07	153.70	180.21

	Engine No. 2706.		Engine No. 2707.		Engine No. 2708.	
	Full Load.	Overload.	Full Load.	Overload.	Full Load.	Overload.
Contract required, horse-power	150	.....	150	.....	150	.....
Excess over contract, horse-power	4.10	.....	3.24	.....	3.70	.....
Gas consumed, cubic feet	1,450	1,527	1,382	1,498	1,440	1,568
Gas consumed per hour, cubic feet	2,900	3,054	2,764	2,996	2,880	3,136
Gas per horse-power, per hour, cubic feet	18.81	17.06	18.03	16.73	18.73	17.40
Less than contract of 20	1.19	.....	1.97	.....	1.27	.....
B. T. U. in cubic feet, gas 30 inches and 60 inches	592	592	576	576	587	587
B. T. U. consumed	858,400	903,968	796,032	862,848	845,280	915,261
B. T. U. per horse-power per hour	11,140.1	10,010.2	10,388.8	9,636.5	10,999.0	10,214.9

Test for Regulation.

	Engine No. 2706.	Engine No. 2707.	Engine No. 2708.
Date of test	May 17, 1905	May 17, 1905	May 17, 1905
Average revolutions of engine, no load	255.3	256.5	255
Average revolutions of engine, full load	249.9	251.5	250
Difference in revolutions per minute	5.4	5.0	5.0
Allowed by contract, 3 per cent	7.5	7.5	7.5

TABLE No. 32.

CONEY ISLAND HIGH PRESSURE FIRE SERVICE STATION.

Test of Gas Engines.

Combined Capacity Test.

Time of start	11 a. m., December 28, 1905.
Time of finish	1 a. m., December 29, 1905.
Duration of test	14 hours.
Revolutions of pump No. 1	32,486
Revolutions of pump No. 2	32,515
Revolutions of pump No. 3	32,523
Total revolutions, Nos. 1, 2 and 3	97,524
Average revolutions per minute, No. 1	38.67
Average revolutions per minute, No. 2	38.70
Average revolutions per minute, No. 3	38.71
Average piston speed, pump No. 1	90.23
Average piston speed, pump No. 2	90.30
Average piston speed, Pump No. 3	90.32
Ratio of engine to pump	6.75
Average revolutions of engine No. 1	261.0
Average revolutions of engine No. 2	261.2
Average revolutions of engine No. 3	261.3
Average water pressure, centre discharge, pipe No. 1, pounds per square in.	153.46
Average water pressure, centre discharge, pipe No. 2, pounds per square in.	153.35
Average water pressure, centre discharge, pipe No. 3, pounds per square in.	153.50
Average suction lift, centre discharge, pounds per square inch	3.06
Average total head, No. 1	156.52
Average total head, No. 2	156.41
Average total head, No. 3	156.56
Average pump horse power, No. 1	142.1
Average pump horse power, No. 2	142.1
Average pump horse power, No. 3	142.3
Total cubic feet of gas consumed	124,795
Average cubic feet of gas consumed per hour	8,914
Average pressure of gas, inches	2.73
Average gallons per minute, by Venturi, first hour	4,511
Average gallons per minute, by Venturi, second hour	4,511
Average gallons per minute, by Venturi, third hour	4,515
Average gallons per minute, by Venturi, fourth hour	4,485
General average gallons per minute, by Venturi, first 4 hours	4,505.5
Average revolutions of pumps, first hour	116.03
Average revolutions of pumps, second hour	116.03
Average revolutions of pumps, third hour	115.81
Average revolutions of pumps, fourth hour	116.81
General average revolution of pumps, first 4 hours	116.00
Gallons per revolution of pump, theoretical	40.23
Average gallons first 4 hours, pump displacement	4,666.68
Per cent. loss of action, slip	3.45
Average gallons per minute, first period of 8 hours, pump displacement	4,666.90
Average gallons per minute, second period of 8 hours, pump displacement	4,667.31
Average gallons per minute, third period of 8 hours, pump displacement	4,669.96
Average gallons per minute, fourth period of 8 hours, pump displacement	4,671.98
Average gallons per minute, fifth period of 8 hours, pump displacement	4,671.83
Average gallons per minute, sixth period of 8 hours, pump displacement	4,671.95
Average gallons per minute, seventh period of 8 hours, pump displacement	4,671.80
Minimum period, 8 consecutive hours, the first	4,666.90
Water pumped per minute, first 8 hours, displacement, less 3.45% slip	4,505.89

TABLE No. 33.

Table Showing Results of Tests of High Pressure Fire Service Mains Laid to December 10, 1905.

Street and Limits.	Size of Main. Inches.	Length of Main.	Allowed Leakage, Gals. P. 10 Mins.	Test Leakage, Gals. P. 10 Mins.	Linear Feet of Joint.	Per Cent. of Leakage.
Furman street, first to second gates north of Joralemon street	20	675.5	11.80	6.73	424.608	57
Furman street, second to third gates north of Joralemon street	20	674.3	11.28	3.74	406.284	33
Furman street, third to fourth gates north of Joralemon street	20	889.5	14.24	6.73	512.568	47
Furman street, fourth to fifth gates north of Joralemon street	20	659.2	10.61	1.50	381.939	14
Furman street, fifth to sixth gates north of Joralemon street	20	510.9	9.68	7.48	348.432	77
Furman street, Joralemon street to State street	20	*720.8	12.11	13.46	436.128	111
State street, Furman street to Columbia place.	20					
State street, Columbia place to Hicks street.	20	460.9	8.43	7.48	303.405	89
State street, Hicks street to Henry street	20	407.1	6.71	3.74	241.362	56
State street, Henry street to Clinton street	20	473.7	7.87	3.74	283.248	47
King street, Ferris street to Conover street.	16	740.2	9.77	8.96	351.574	92
Conover street, King street to William street	16					
Imlay street, Hamilton avenue to Bowne street	16	712.3	9.98	3.00	359.402	30
Imlay street, Bowne street to Commerce street	16	534.4	7.34	4.49	264.270	61
Imlay street, Commerce street to Verona street	16	535.6	7.44	4.49	267.935	60
Imlay street, Verona street to William street	16	*745.4	11.15	11.97	401.706	107
William street, Imlay street to Conover street	16					
Van Brunt street, Sullivan street to gate south of Walcott street	16	467.3	8.48	0.75	305.258	9
Van Brunt street, gate south of Walcott street to Coffey street	16	474.2	6.52	2.99	234.950	46
Van Brunt street, Coffey street to Reid street	12/16	731.9	10.67	2.24	384.166	21
Sullivan street, Van Brunt street to Richards street	16	545.1	6.90	1.50	248.432	22
Richards street, Sullivan street to William street	16	533.9	7.96	2.99	286.652	38
Richards street, William street to Verona street	16	447.9	6.36	2.24	229.060	35
Ferris street, Sullivan street to Coffey street	16	759.4	10.95	8.23	394.134	75
Sullivan street, Ferris street to Van Brunt street	12	953.2	9.19	8.23	330.896	89
Conover street, Coffey street to water front	12	986.7	9.99	5.31	359.691	53
Beard street, Van Brunt street to Dwight street	12	1,083.2	11.42	4.49	410.476	39
William street, Imlay street to Richards street	12	726.6	6.85	2.99	246.601	44
Verona street, Imlay street to Richards street	12	733.3	7.66	6.73	275.920	88
Commerce street, Imlay street to Richards street.	12	735.8	7.20	3.74	259.167	52
Delevan street, Richards street to Dwight street.	12	494.8	4.94	2.99	176.970	60
Bowne street, Imlay street to Richards street	12	714.9	7.36	5.98	264.926	81
Tillary street, Washington street to Pearl street	*12	477.5	5.08	5.21	182.725	103
Lawrence street, Willoughby street to Fulton street	12	304.7	3.91	0.75	140.838	19
Hamilton avenue, Woodhull street to Carroll street	12	633.7	6.60	5.20	237.700	79
Lafayette street, Navy street to Hudson avenue	*12	188.0	2.08	2.24	74.823	108
Lafayette street, Hudson avenue to Fleet street	12	374.0	4.01	0.75	144.504	18
Hudson avenue, Willoughby street to De Kalb avenue	12	736.7	8.12	2.08	292.152	25
Hudson avenue, De Kalb avenue to Fulton street	12	380.0	4.20	0.75	151.311	18
Hudson avenue, Willoughby street to Myrtle avenue	12	500.5	5.32	2.24	191.626	42
Ferris street, Commercial wharf to Sullivan street	16/12	553.3	7.89	6.73	284.165	86
Dikeman street, Ferris street to water front.	12	760.4	7.90	3.74	282.203	47
Coffey street, Ferris street to Van Brunt street	12	975.9	10.16	8.98	365.975	88
President street, Van Brunt street to Columbia street	12	564.9	5.57	1.87	200.527	34

*This excess of leakage was due to leakage in pump connection, not to defect in joints.

DIAGRAM No. 1.

Showing Hourly Consumption of Water from the Ridgewood System During September 1904 and 1905.

DIAGRAM No. 2.

Showing Contents of Reservoirs, Consumption, Rainfall and Temperature, 1896—1906.

DIAGRAM SHOWING THE QUALITY OF THE BROOKLYN WATER SUPPLY TAP AT FLUSHING AVENUE, 1905.

LOCATION OF HYDRANTS AND TELEPHONE SIGNAL BOXES, CONEY ISLAND HIGH PRESSURE FIRE SERVICE.

Department of Water Supply, Gas and Electricity,
Office of Deputy Commissioner, Municipal Building, Room 28,
Brooklyn, January 20, 1906.

Hon. WILLIAM B. ELLISON, Commissioner of Water Supply, Gas and Electricity:

Dear Sir—I beg to transmit herewith statistical report of the Bureau of Electricity and Gas in this borough for the year 1905, in duplicate.

Yours truly,
WM. C. COZIER,
Deputy Commissioner, Borough of Brooklyn.

DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY, BUREAU OF ELECTRICITY AND GAS, BROOKLYN.

Report of Operations During the Year 1905.

	Poles and Overhead Wires.	Subways.	Subway Subsidiaries.	Uundergound Conductors.	Interior Wiring.	Total.
Applications received	9,033	521	1,767	1,618	7,843	20,782
Applications refused	213	6	21	12	953	1,205
Applications pending						
Permits or certificates granted	8,820	515	1,746	1,606	6,890	19,577

Companies.	Distribution and Classification of Permits.				Operations.						
	Poles and Overhead Wires.	Subways.	Subway Subsidiaries.	Under-ground Conductors.	Poles Erected.	Poles Removed.	Overhead Wires Removed (Miles).	Subway Constructed (Miles).	Subway Duct Laid (Miles).	Conductors Placed in Subways (Miles).	Gas Main Laid (Miles).
Brooklyn Borough Gas Company	.....	.....	65	.....	.....	.....	.....	.....	.....	.....	4.01
Brooklyn Heights Railroad Company	160	15	11	28	1,868	784	32.90	4.21	33.34	42.26	.....
Brooklyn, Queens County and Suburban Railroad Company	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....
Brooklyn Union Gas Company	.....	.....	134	.....	.....	.....	.....	.....	.....	.....	19.62
Coney Island and Brooklyn Railroad Company	15	3	.....	8	16	4	6.00	0.07	0.58	1.75	.....
Edison Electric Illuminating Company	2,228	336	910	1,242	1,401	630	9.95	18.15	76.99	136.56	.....
Flatbush Gas Company	167	9	118	123	74	6	2.00	2.4	11.00	6.59	5.50
Kings County Lighting Company	.....	.....	56	.....	.....	.....	.....	.....	.....	.....	2.59
Long Island Railroad Company	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York and New Jersey Telephone Company	6,174	119	369	167	942	629	257.35	19.69	103.31	24,837.21	.....
Nassau Electric Railroad Company	1	.....	.....	3	.....	.....	.....	.....	.....	.....	.....
Postal Telegraph and Cable Company	9	.....	.....	.....	.....	.....	.....	.....	.....	5.00	.....
Stock Quotation Telegraph Company	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Western Union Telegraph Company	18	.....	1	.....	.....	41	24.00	.....	.....	1.33	.....
Department of Bridges	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fire Department	41	23	72	.....	27	33	10.25	3.62	7.25	.....	.....
Police Department	.....	9	10	32	.....	.....	25.00	.....	0.69	285.00	.....
Louis Stutz	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bush Terminal Company	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	8,820	515	1,746	1,606	4,328	2,127	367.45	48.14	233.16	25,315.70	31.72

Appliances Inspected.

Incandescent lamps	181,761
Arc lamps	1,519
Motors (horse power, 6,527.37)	1,760
Generators (kilowatts, 12,605.54)	81
Services	1,343
Inspections interior wiring	27,523
Complaints sent out	2,075
Electric meter tests	14
Photometric tests of gas	211
Purity tests of gas	2
Quality test of gas	1

H. S. WYNKOOP, Electrical Engineer.

IV b.

Brooklyn, New York, January 19, 1906.

Hon. WILLIAM C. COZIER, Deputy Commissioner of Water Supply, Gas and Electricity, Borough of Brooklyn:

Dear Sir—In presenting herewith the annual schedule of operations of the Bureau of Electricity and Gas, I beg to submit the following report for the year 1905:

Testing of Gas.

The candle power of illuminating gas has been the subject of regular and frequent tests, which have generally been made at the various works and by the aid of apparatus furnished by the companies. In last year's report I suggested the inappropriateness of employing for these tests apparatus other than that which was exclusively under our control, and it gives me pleasure to report that Dr. E. G. Love, the Chief Gas Examiner of the Department, has established several photometric stations and is about to engage in gas testing in a comprehensive manner, which the limited facilities of this Bureau have never permitted us to adopt.

One Inspector is engaged exclusively on photometric and quality tests and the investigation of gas complaints. During the year he has made 211 photometric tests, two purity tests and one quality test. The maximum candle power reported is 29.92; the minimum candle power reported is 17.77; the average candle power 24.55. The Charter requires a minimum of twenty candles, and only two tests fell below that figure. Chapters 1522 and 1523, Laws of 1905, have raised the candle power requirements to twenty-two.

I am awaiting instructions that will either give us control of the gas situation for Brooklyn or will place the matter entirely in the hands of Dr. Love.

Electric Meters.

We have no inspectors of electric meters in the employ of the Bureau, and such tests of this nature as we are obliged to make must be done by Inspectors taken away from more important duties. As a result, we have not encouraged requests for tests of electric meters, but upon request we have tested during the year fourteen meters.

From conferences with Professor George F. Sever, Consulting Electrical Engineer of this Department and Professor of Electricity at Columbia University, I learn that a plan for transferring testing of meters to a well equipped scientific laboratory is under way, and the idea meets with my hearty indorsement.

Interior Conductors.

Under this head may be classed the inspection of electrical appliances, of wiring introduced into buildings or elevated railway cars and the reinspection of old electric equipments. The investigation of all fires whose origin is doubtful or is attributable to electricity is included in this category, and in this matter we work in harmony with the Fire Marshal's office.

Special Monday inspections are made of electrical features used by theatrical companies.

Although our inspection force has been increased slightly during the year it is insufficient for our purposes. We require two additional Inspectors to enable us to keep up with the purely routine portion of our work.

"A systematic canvass and resurvey of all old electric equipments in the borough should be undertaken at once and should become a permanent feature of our work, the routine being so arranged that each equipment might come under our observation at least once in two years. This would require a substantial increase in our inspection force, as it is fully as important to see that electric appliances and wiring are properly maintained as to supervise their correct installation. Increasing vigilance must be exerted as the equipments grow older, and some of them are now eighteen or twenty years old."

This quotation from last year's report is still pertinent.

The certificates of approval issued number 6890 and cover 181,761 incandescent lamps, 1,519 arc lamps, 6,527 horse power of motors, 12,606 kilowatts of generators and 1,343 services.

Upon reading over last year's report I find that so little progress has been made in some directions as to warrant me in transcribing bodily the following quoted matter:

"Overhead Wires.

"Brooklyn is cursed with an immense mass of overhead conductors of all classes, interwoven in all kinds of shapes. This is the outgrowth of years of construction—much of it without proper official supervision—and we are endeavoring continually to bring about better conditions, either through the burial of wires or through the rearrangement of pole lines."

"There is much to contend against. We have no public subway company to provide ducts for the reception of electric conductors; and each operating company is reluctant to incur the greater expense of constructing its own independent subway except where it can see immediate money returns to cover the investment. The suburban territory is developing so rapidly that the sums usually voted by the companies for 'betterment' must be expended in 'extension.' Even the resolutions of the Board of Estimate and Apportionment ordering the clearing of streets are complied with only in part; and in this the City itself, as represented by its fire and police signal systems, has been the most flagrant violator of the law. In respect of this peculiarly inconsistent situation, conditions are improving, as the Police Department has done considerable cable laying recently and the Fire Department announces its intention of doing something."

"The Fire Department has obtained funds for wire burial and is going about the work with great energy. More has been accomplished within the last six months than in the entire six years preceding."

"So long as our highways must be burdened with poles and wires the latter should be rendered as little objectionable as possible. Neat painting and stenciling, proper location and relocation, the replacing of decrepit poles and the prosecution of those persons who willfully deface the poles by attaching advertising matter thereto (in defiance of a City ordinance), should be insisted upon. In the matter of unsightly poles and lines the City sets a sorry example."

"A general reinspection of the overhead wires is now under way."

"Two Inspectors are employed on poles and overhead wire matters."

"A large field of usefulness awaits, here in Brooklyn, the advent of a 'pole-chopping gang,' similar to the one that made electrical history for old New York some twenty years ago."

"Third Rail.

"For six years the operation of an exposed third rail on our elevated railways has been watched carefully. We have kept ourselves thoroughly conversant with engineering progress along the line of third rail protection. Believing that the time for action had arrived, I recommended last fall that the subject be taken up by the Consulting Electrical Engineer."

"Subways.

"As usual, the companies have proceeded with the construction of subways additional to those ordered by the Board of Estimate and Apportionment. Much cable remains to be drawn in, however, even in those locations where it long since became illegal to maintain overhead wires. As against this delay in cable laying there are many instances in which the company has constructed a subway, laid cable therein, removed its overhead wires and attempted to take down its poles—only to find that

the poles must remain indefinitely owing to the presence thereon of parasitical City wires. Some twelve or fifteen hundred poles owe their presence on our highways to this one cause.

"Sub-Surface Construction Maps.

"The space beneath our roadways is becoming occupied very rapidly, and in the past due consideration has not been given to the relation of new constructions to old. This is due largely to the fact that a general map showing in consolidated form all the subsurface construction does not exist.

"We have attempted to prepare such a map, but the rate of progress has been very slow. Until his resignation last October our one Draughtsman gave a portion of his time to this work, which is now stopped. I have been unable to secure any appropriation whatever for undertaking, even on the smallest scale, the preparation of these maps.

"Electrolysis.

"As in the two years previous, this investigation is in the hands of Mr. H. S. Blackwell, Electrical Engineer, and Assistant to the Consulting Electrical Engineer.

"The Electric Code.

"The Consulting Electrical Engineer, after more than a year's labor, has brought substantially to a conclusion the preparation of a revised set of electric rules, based upon the National Electric Code and designated as 'The Electric Code of The City of New York.' The Commissioner has submitted these rules to the Board of Aldermen, and the prospect of securing this greatly needed ordinance is promising.

"The preparation of the code has been a work of considerable magnitude, and its enactment is sure to reflect great credit upon the administration. Much doubtful construction has gone into service and many dangerous equipments have remained uncorrected, owing to our inability to enforce our requirements by law when moral suasion has failed.

"Licensing Electricians.

"There are some electrical workers and contractors, I regret to say, who—through either intent or ignorance—vitiate to some extent the good accomplished by our inspections. Many of these persons may be brought into line through the operations of the proposed electric code. However, the penalty attached to the code would be no assurance against incompetency; nor would it prove a bar to rascality in cases where payment of a non-cumulative fine would be cheaper than compliance with our requirements. A system of licensing would tend to weed out the ignorant and deter the vicious.

"I earnestly urge the adoption of such a system, applied either to the contractor or to the worker, or to both, as may be deemed expedient.

"Municipal Ownership.

"I can see no relief save in municipal ownership of wire-carrying subways and poles from the present intolerable condition due to lack of harmony of purpose between the City's three electrical interests—fire, police and water supply—on the one hand, and the electric companies on the other. It seems to me that the City should own all the poles and rent space thereon, just as it should own all the wire subways and rent space therein. In this way new construction would be undertaken with a view to future general needs rather than to the immediate requirements of one company out of the dozen.

"The Office.

"Last year I reported that our quarters (which I have been accustomed to characterize as ridiculously inadequate) had been increased by the addition of one small room. There has been no increase in floor space during 1905, nor has there been any increase in clerical force. It gives me pleasure, however, to report some kind of an increase, and that is an increase of between forty and fifty per cent. in the volume of work which the Bureau has had to handle."

Recommendations.

Last year I made the following recommendations:

First—The establishment of a photometer wagon and four photometric stations. The photometric stations are being established.

Second—The appointment of two Inspectors of electric meters. Electric meter tests are to be handled, I understand, at the Laboratory of Columbia University.

Third—The appointment of at least two additional Inspectors of electrical wiring. One Inspector came to us through reinstatement.

Fourth—An appropriation for making a substantial start in the preparation of sub-surface construction maps. This appropriation has not been made.

Fifth—An ordinance licensing electrical workers or contractors. No ordinance has been passed.

Sixth—The municipal ownership of all wire-carrying subways or poles. Little has been accomplished in this direction; but within the last few months the matter of providing a subway for municipal lighting wires in Brooklyn has been taken up quite energetically by the Board of Estimate and Apportionment.

Seventh—Increased office space. The space has not been obtained.

Eighth—A greatly increased appropriation for the Bureau. The appropriation for 1905 was about five thousand dollars less than the appropriation for 1904.

In conclusion, permit me to call attention to the creditable work of my subordinates. The office force particularly has worked faithfully under great disadvantages and discouragements.

Respectfully,
H. S. WYNKOOP, Electrical Engineer.

Department of Water Supply, Gas and Electricity,
Bureau of Lamps and Lighting, Municipal Building, Room 35,
Brooklyn, January 30, 1906.

Mr. WILLIAM C. COZIER, Deputy Commissioner:

Dear Sir—You will please find herewith attached the annual report of the Bureau of Lamps and Lighting for the year 1905, descriptive of the public lighting in the Borough of Brooklyn.

I would report that owing to an inadequate lighting appropriation for the year it has been impossible to meet the demands of new street lighting in this Borough and in most instances petitions which have been regularly filed by taxpayers and citizens, requesting street lighting, have been set aside with the explanation of "inadequate funds to meet their demands," except in extreme cases, where lights have been erected in order to make dangerous intersections safe to public travel. I would again strongly recommend improved lighting in the older sections of the Borough, in the substitution of Welsbachs for open flame gas lamps, and would most respectfully call your attention to the serious condition of the streets in the suburban sections of this Borough, the greater part of which is in a deplorable condition, owing to the absence of street lighting. Petitions are daily filed with this Bureau by the taxpayers and citizens requesting street lighting, in order to make the highways in the newer sections safe for travel.

I would ask your assistance to increase my office force by an additional Clerk and a Draughtsman, and would recommend that six (6) additional Inspectors of Lamps and Gas be appointed and assigned to my Bureau, in order to have day and night inspections made in the several lighting districts in this Borough.

The rooms assigned to the Bureau of Lamps and Lighting are not only inadequate as to floor space, but are unsightly and most unsanitary, and I would ask your assistance to have additional quarters assigned to this Bureau.

Very respectfully,
A. E. ALLEN,
Assistant Engineer in Charge of Lighting.

Annual Report for the Year Ending December 31, 1905.

During the year ending December 31, 1905, there were received in general relation to lamp lighting, repairs required to same, etc., from citizens, Inspectors and others, 1,786 complaints and requests; of these, 1,277 were received from citizens and 509 from the Department Inspectors.

Orders were issued to the various light supplying companies in connection with the above complaints and requests.

The number of lamps of each kind in service December 31, 1905, is as follows:

Gas lamps, open flame	10,332
Welsbach lamps, gas	5,942
Welsbach lamps, naphtha	487
Electric lights, 1,200 candle power	4,841
Electric lights, 600 candle power	210
Naphtha lamps, plain	12
	21,824

The companies supplying lighting, and the number of lamps maintained by each, are as follows:

Brooklyn Union Gas Company, open flame gas	5,728
Brooklyn Union Gas Company, Welsbach gas	5,942
Kings County Lighting Company, open flame gas	4,549
Brooklyn Borough Gas Company, open flame gas	55
Edison Electric Illuminating Company, 1,200 candle power, electric	4,116
Edison Electric Illuminating Company, 600 candle power, electric	210
Flatbush Gas Company, 1,200 candle power, electric	725
Welsbach Street Lighting Company of America, naphtha Welsbach	487
New York and New Jersey Globe Gas Light Company, plain naphtha	12
	21,824

Changes were made in extending the lighting systems during the year as follows:

New gas lamps added	571
Gas lamps uncapped and relighted	28
Gas lamps capped and discontinued	481
New Welsbach lamps added	1,169
Welsbach lamps capped and discontinued	36
New electric lights added	223
Electric lights relighted	10
Electric lights extinguished	155
Welsbach naphtha lamps added	31

Showing required repairs to gas lamp-posts, accomplished during the year ending December 31, 1905, the number of posts set and the number removed:

Releaded	52
Reset	651
Straightened	32
New standpipes	118
New services	94
New columns	12
New posts set	1,141
Posts removed to storehouse	1,081

In addition to the above, the putting on of new globes, reglazing and cleaning of lamps, repairing and replacing of stop-cocks, putting on of new burners and stems (much of which kind of repairs it was found necessary to make) was accomplished upon orders to the various companies.

Statement showing the number of gas lamps, Welsbachs, naphtha Welsbachs and plain naphtha lamps burning January 1, 1905; the number of new lamps installed and lighted; the number capped and discontinued; the number uncapped and relighted; the number burning December 31, 1905; the companies supplying the same:

Companies Supplying Light.	Burning January 1, 1905.	New Lamps.	Uncapped.	Capped.	In Service December 31, 1905.
Brooklyn Union Gas Company	5,858	323	28	481	5,728
Brooklyn Union Gas Company	4,809	1,169	....	36	5,942
Kings County Lighting Company	4,356	193	....	....	4,549
Brooklyn Borough Gas Company	....	55	....	....	55
Welsbach Street Lighting Company of America	456	31	....	....	487
New York and New Jersey Globe Gas Light Company	12	....	....	....	12
	15,491	1,771	28	517	16,773

Statement showing the number of electric lights, and the candle power of each, burning January 1, 1905; the number of new lights erected and lighted during the year, and the number extinguished; the number relighted, the number burning December 31, 1905; the companies supplying the same:

Companies Supplying Light.	Candle Power.	Burning January 1, 1905.	New Lamps.	Extinguished.	Relighted.	Burning December 31, 1905.
Edison Electric Illuminating Company	1,200	4,115	144	153	10	4,116
Edison Electric Illuminating Company	600	210	....	....	....	210
Flatbush Gas Company	1,200	648	79	2	....	725
	....	4,973	223	155	10	5,051

Street Sign Lamps.

Two (2) systems of street sign lamps were in commission on January 1, 1905; one gas and one electric, as follows:

Gas street sign lamps	303
Electric street sign lamps	346

All of these street sign lamps were discontinued during March, 1905, by order of the Board of Estimate and Apportionment.

Statement showing the various companies which supplied public lighting under contract or without contract during the year 1905, and other matters incident thereto:

Companies.	Duration of Contract.	Expiration of Contract.	Unexpired Portion.	Price Per Lamp, Current Year.	Candle Power of Lamps.
Kings County Lighting Company	25 Years	Dec. 31, 1914	9 Years	$28 00	20—Open flame
Flatbush Gas Company	15 Years	Oct. 8, 1908	2 Yrs. 8 Mo.	97 50	1,200—Arcs
Brooklyn Union Gas Company	*	*	*	15 75	20—Open flame
Brooklyn Union Gas Company	*	*	*	30 75	60—Welsbach
Brooklyn Borough Gas Company	*	*	*	18 00	20—Open flame
Edison Electric Illuminating Company	*	*	*	124 10	1,200—Arcs
Edison Electric Illuminating Company	*	*	*	62 05	600—Arcs
Welsbach Street Lighting Company	*	*	*	29 00	60—Naphtha Welsbach
New York and New Jersey Globe Gas Light Company	*	*	*	22 00	20—Plain naphtha
Flatbush Gas Company	*	*	*	116 80	1,200—Arcs

*No contract; bids submitted March 16, 1905.

Note—In explaining the above prices, where there are no contracts in force, the Brooklyn Union Gas Company have submitted no bills since date of bid (March 16, 1905) for street lighting; the Brooklyn Borough Gas Company has submitted no bills for street lighting; the Edison Electric Illuminating Company has submitted bills at the above mentioned prices up to July 1, 1905, when the new law went into effect, fixing the price of electric lights (chapter 737, Laws of State of New York), since which time this company has billed their lamps as follows:

250 watt lamps, per year	$65 00
375 watt lamps, per year	94 00
325 watt lamps, per year	90 00
400 watt lamps, per year	96 00

This company had a total of 4,326 lamps on December 31, 1905, which it divided as to wattages as follows:

250 watt lamps	210
400 watt lamps	93
375 watt lamps	893
325 watt lamps	3,130
Total	4,326

The Welsbach Street Lighting Company billed their lamps at the rate of $29.70 per year to March 16, 1905, and for the balance of the year (291 days) at $23.12, which is at the rate of $29 per lamp per year.

The New York and New Jersey Globe Gas Light Company has rendered bills for the entire year at the above rate, i. e., $22 per lamp per year.

The Flatbush Gas Company has sent bills for all electric lights in the Twenty-ninth Ward, but has rendered no bills for the 66 lamps on Ocean parkway, south of Foster avenue. The Flatbush Gas Company claimed said lamps to be 475 watts each.

The number of electric lights discovered unlighted and tabulated from reports made by the Police and Bureau Inspectors, the outages deducted from the monthly bills of the companies:

Months.	Number of Lamps.	Deductions.
January	1,252	$425 68
February	293	99 62
March	188	63 92
April	64	21 76
May	286	87 24
June	108	56 72
July	249	61 40
August	69	17 02
September	389	95 92
October	181	44 63
November	654	161 26
December	438	108 00
	4,171	$1,243 17

The number of gas lamps discovered unlighted, and tabulated from reports made by the Police and Bureau Inspectors, the outages to be deducted from the monthly bills of the companies:

Months.	Number of Lamps.	Deductions.
January	2,437	$173 05
February	5,345	331 92
March	1,376	68 77
April	183	9 20
May	144	6 44
June	148	6 39
July	99	4 88
August	64	3 16
September	334	17 49
October	216	10 63
November	438	27 79
December	786	49 02
	11,570	$708 78

Storehouse Report.

The following lamp stock was received at the department storehouse during the year 1905, incident to changes in the lighting systems:

Lamp-posts	893
Square lanterns	290
Square frames	874
Boulevard globes	280
Boulevard frames	4
Boulevard domes	509
Boulevard canopies	52
Boulevard reflectors	18
Cocks and stems	144

The following lamp stock was delivered to gas companies during the year 1905, in the matter of new work, reconstruction, repairs, etc.:

Lamp-posts	951
Square lanterns	628
Square frames	560
Boulevard globes	168
Boulevard frames	28
Boulevard domes	155
Boulevard canopies	88
Boulevard reflectors	11
Cocks and stems	127
Lamp-post uprights	2

Showing work accomplished in the matter of repairs to lanterns, frames, etc., during the year 1905:

Square lanterns painted and repaired	1,168
Square frames painted and repaired	1,361
Boulevard frames painted and repaired	769
Canopies painted and repaired	785
Reflectors painted and repaired	529

Lamp stock at department storehouse December 31, 1905:

Gas lamp-posts	12
Cocks and stems	110
Square lanterns	810
Square frames	390
Boulevard frames	496
Boulevard globes	261
Boulevard domes	443
Boulevard canopies	211
Boulevard reflectors	225
Police globes	17
Police canopies	18

Showing the Mileage of Gas Mains of the Several Gas Companies to December 31, 1905.

Brooklyn Union Gas Company, total mileage in district, 826 miles.
Kings County Lighting Company, total mileage in district, 134 miles, 543 feet.
Brooklyn Borough Gas Company, total mileage in district, 60 miles.

Showing Locations where 1,200 Candle Power Electric Lights Were Erected and Lighted During the Year 1905.

Date.	Location.	Company.	Number of Lights.
Jan. 20.	Prospect Park, stable yard	Edison Electric Illuminating Co.	1
Mar. 4.	Meserole street, southeast corner of Bogart street	Edison Electric Illuminating Co.	1
Mar. 11.	Kingston avenue, southeast corner of Rutland road	Flatbush Gas Co.	1
Mar. 11.	Kingston Avenue Hospital grounds	Flatbush Gas Co.	1
Mar. 27.	Herkimer street, southeast corner of Herkimer court	Edison Electric Illuminating Co.	1
Apr. 1.	Warren street, opposite No. 49	Edison Electric Illuminating Co.	1
Apr. 13.	Flatlands avenue, corner of East Eighty-ninth street	Edison Electric Illuminating Co.	1
Apr. 17.	West Ninth street, between Henry and Clinton streets	Edison Electric Illuminating Co.	1
May 1.	Neptune avenue, northeast corner of West Twelfth street	Edison Electric Illuminating Co.	1
May 1.	Engert avenue, northeast corner of Eckford street	Edison Electric Illuminating Co.	1
May 3.	Prospect Park lake lights, relighted	Edison Electric Illuminating Co.	10
May 15.	Avenue G, from Coney Island avenue to East Nineteenth street	Edison Electric Illuminating Co.	8
May 15.	Avenue H, corners of East Twelfth, East Thirteenth and East Fourteenth streets	Edison Electric Illuminating Co.	3
May 15.	East Twelfth street, between Avenues G and H	Edison Electric Illuminating Co.	2
May 15.	East Thirteenth street, between Avenue H and Foster avenue	Edison Electric Illuminating Co.	3
May 15.	East Fourteenth street, between Wellington court and Foster avenue	Edison Electric Illuminating Co.	3
May 15.	East Seventeenth street, between Avenue G and Foster avenue	Edison Electric Illuminating Co.	2
May 15.	East Eighteenth street, between Avenue G and Foster avenue	Edison Electric Illuminating Co.	2
May 15.	East Nineteenth street, between Avenue G and Foster avenue	Edison Electric Illuminating Co.	2
May 15.	Avenue B, between Flatbush avenue and Ocean avenue	Edison Electric Illuminating Co.	8
May 21.	Morgan avenue, corner of Metropolitan avenue	Edison Electric Illuminating Co.	1
May 21.	Morgan avenue, corner of Maujer street	Edison Electric Illuminating Co.	1
May 21.	Morgan avenue, corner of Ten Eyck street	Edison Electric Illuminating Co.	1
May 21.	Morgan avenue, corner of Meadow street	Edison Electric Illuminating Co.	1
May 27.	Union street, bridge over Gowanus Canal	Edison Electric Illuminating Co.	4
May 27.	Hamilton avenue, bridge over Gowanus canal	Edison Electric Illuminating Co.	4
June 29.	Caton place, between Ocean parkway and East Eighth street	Flatbush Gas Co.	1
June 29.	Prospect avenue, between Fort Hamilton and Greenwood avenues	Flatbush Gas Co.	1
July 10.	Caton place, between Coney Island avenue and East Eighth street	Flatbush Gas Co.	1
July 25.	Midwood street, between Albany and Troy avenues	Flatbush Gas Co.	1
July 25.	Rutland road, between Albany and Troy avenues	Flatbush Gas Co.	1
Aug. 4.	Prospect avenue, between Terrace place and Greenwood avenue	Flatbush Gas Co.	4
Aug. 5.	Bedford avenue, between Montgomery street and Flatbush avenue	Flatbush Gas Co.	31
Aug. 22.	Utica avenue, from Rochester avenue to Avenue C	Flatbush Gas Co.	9
Aug. 26.	East Seventeenth street, between Beverley road and Avenue C	Flatbush Gas Co.	1
Aug. 28.	East Eighth street, between Beverley road and Avenue C	Flatbush Gas Co.	1
Aug. 28.	East Fifth street, between Fort Hamilton and Church avenues	Flatbush Gas Co.	5
Aug. 28.	Coney Island avenue, between Greenwood avenue and Reeve place	Flatbush Gas Co.	1
Aug. 19.	Concourse Park, on beach at Coney Island	Edison Electric Illuminating Co.	10
Aug. 26.	Lombardy street, between Morgan and Kingsland avenues	Edison Electric Illuminating Co.	1
Sept. 1.	Pennsylvania avenue, corner of Livonia avenue	Edison Electric Illuminating Co.	1
Sept. 1.	Pennsylvania avenue, corner of Dumont avenue	Edison Electric Illuminating Co.	1
Sept. 1.	Pennsylvania avenue, corner of Riverdale avenue	Edison Electric Illuminating Co.	1
Sept. 1.	St. Mark's avenue, southwest corner of Sixth avenue	Edison Electric Illuminating Co.	1
Sept. 1.	Pacific street, from Flatbush avenue to Vanderbilt avenue	Edison Electric Illuminating Co.	10

Date.	Location.	Company.	Number of Lights.
Sept. 11.	Rockaway avenue, corner of Livonia avenue.....	Edison Electric Illuminating Co.	1
Sept. 11.	Rockaway avenue, corner of Riverdale avenue...	Edison Electric Illuminating Co.	1
Sept. 11.	Rockaway avenue, corner of Newport avenue....	Edison Electric Illuminating Co.	1
Sept. 11.	Warwick street, between Atlantic and Liberty avenues	Edison Electric Illuminating Co.	1
Sept. 22.	Bergen street, Nos. 549 and 606.....	Edison Electric Illuminating Co.	2
Sept. 25.	East Twenty-first street, between Emmons and Voorhees avenues.....	Edison Electric Illuminating Co.	1
Sept. 27.	Avenue C, corner of Greenwood avenue.....	Flatbush Gas Co.....	1
Oct. 2.	Elm avenue, from Coney Island avenue to Bay avenues	Edison Electric Illuminating Co.	7
Oct. 2.	Bay avenue, from Elm avenue to Ocean avenue..	Edison Electric Illuminating Co.	2
Oct. 25.	Church avenue, north side, west of Bedford avenue	Flatbush Gas Co.....	1
Oct. 30.	West avenue, at the junction of Fortieth street and Avenue E.....	Flatbush Gas Co.....	1
Nov. 6.	East Fifth street, from Avenue C to Avenue F..	Flatbush Gas Co.....	5
Nov. 6.	Avenue V, corner of Homecrest avenue.....	Edison Electric Illuminating Co.	1
Nov. 15.	Nassau avenue, corner of Van Dam street.....	Edison Electric Illuminating Co.	1
Nov. 15.	Seventeenth street, at the junction of West avenue and Forty-second street.....	Flatbush Gas Co.....	1
Nov. 16.	Avenue D, corner of East Third street.....	Flatbush Gas Co.....	1
Nov. 15.	Avenue E, corner of Gravesend avenue.....	Flatbush Gas Co.....	1
Nov. 23.	Rockaway avenue, between Liberty and Newport avenues.....	Edison Electric Illuminating Co.	9
Nov. 25.	Voorhees avenue, northeast corner of East Twenty-second street.....	Edison Electric Illuminating Co.	1
Dec. 1.	East Third street, between Fort Hamilton avenue and Vanderbilt street.....	Flatbush Gas Co.....	2
Dec. 1.	East Fourth street, between Fort Hamilton avenue and Vanderbilt street.....	Flatbush Gas Co.....	2
Dec. 2.	West Twenty-third street, corner of Highland View avenue	Edison Electric Illuminating Co.	1
Dec. 2.	East Third street, southeast corner of Neck road	Edison Electric Illuminating Co.	1
Dec. 1.	East New York avenue, corner of Douglass street	Edison Electric Illuminating Co.	1
Dec. 1.	East New York avenue, corner of Saratoga avenue	Edison Electric Illuminating Co.	1
Dec. 1.	St. John's place, corner of Saratoga avenue....	Edison Electric Illuminating Co.	1
Dec. 7.	In front of Hall of Records.....	Edison Electric Illuminating Co.	2
Dec. 7.	Boerum place, corner of Pacific street.....	Edison Electric Illuminating Co.	1
Dec. 7.	Warehouse avenue, between Surf and Neptune avenues	Edison Electric Illuminating Co.	4
Dec. 8.	Diamond street, southwest corner of Meserole avenue	Edison Electric Illuminating Co.	1
Dec. 13.	Saratoga avenue, corner of Prospect place.....	Edison Electric Illuminating Co.	1
Dec. 13.	Saratoga avenue, corner of St. Mark's avenue...	Edison Electric Illuminating Co.	1
Dec. 13.	Saratoga avenue, corner of Park place.....	Edison Electric Illuminating Co.	1
Dec. 13.	Ninth street, bridge over Gowanus Canal.....	Edison Electric Illuminating Co.	4
Dec. 13.	Avenue H, from Ocean avenue to Brighton Beach Railroad.....	Edison Electric Illuminating Co.	10
Dec. 15.	East Fourteenth street, between Kings Highway and Avenue U.....	Edison Electric Illuminating Co.	1
Dec. 21.	Bay Thirty-eighth street, between Benson avenue and Eighty-sixth street.....	Edison Electric Illuminating Co.	1
Dec. 23.	Tompkins avenue, corner of Decatur street.....	Edison Electric Illuminating Co.	1
Dec. 23.	Tompkins avenue, corner of Hancock street.....	Edison Electric Illuminating Co.	1
Dec. 23.	Tompkins avenue, corner of Macon street.....	Edison Electric Illuminating Co.	1
Dec. 23.	Tompkins avenue, corner of Lafayette avenue...	Edison Electric Illuminating Co.	1
Dec. 23.	East Fifth street, between Church avenue and Beverley road.....	Flatbush Gas Co.....	1
Dec. 30.	Gravesend avenue, between Fort Hamilton avenue and Terrace place.....	Flatbush Gas Co.....	3
Dec. 30.	Nostrand avenue, corner of Lefferts street.....	Flatbush Gas Co.....	1
Dec. 30.	Flatlands avenue, corner of East Eighty-first street.....	Edison Electric Illuminating Co.	1
Dec. 30.	Avenue T, corner of East Nineteenth street....	Edison Electric Illuminating Co.	1
			233

	Lights.
Edison Electric Illuminating Company.....	154
Flatbush Gas Company	79
	233

Showing Locations where 1,200 Candle Power Electric Lights Were Capped and Discontinued During the Year 1905.

Date.	Location.	Company.	Number of Lights.
Jan. 1.	Schenck avenue, corner of Arlington avenue....	Edison Electric Illuminating Co.	1
Mar. 7.	New Jersey avenue, between Fulton street and Jamaica avenue.....	Edison Electric Illuminating Co.	1
Mar. 15.	Dean street, west of Troy avenue.....	Edison Electric Illuminating Co.	1
Mar. 30.	Prospect Park lake.....	Edison Electric Illuminating Co.	10
Apr. 11.	Stone, avenue, corner of Pitkin avenue.....	Edison Electric Illuminating Co.	1
Apr. 11.	Snediker avenue, corner of Pitkin avenue.....	Edison Electric Illuminating Co.	1
May 17.	Water street, corner of Adams street.....	Edison Electric Illuminating Co.	1
May 25.	Tallman street, between Jay and Bridge streets..	Edison Electric Illuminating Co.	1
May 25.	North Elliott place, between Park avenue and Auburn place.....	Edison Electric Illuminating Co.	1
May 27.	Union street Bridge.....	Edison Electric Illuminating Co.	2
May 27.	Hamilton avenue, bridge over Gowanus Canal...	Edison Electric Illuminating Co.	2
June 1.	City Park.....	Edison Electric Illuminating Co.	5
June 15.	No. 832 Monroe street, between Ralph and Howard avenues.....	Edison Electric Illuminating Co.	1
June 24.	Dodsworth street, between Broadway and Bushwick avenue.....	Edison Electric Illuminating Co.	1
July 21.	Atlantic avenue, from Saratoga avenue to Eldert street	Edison Electric Illuminating Co.	55
July 24.	Third place, between Clinton and Henry streets..	Edison Electric Illuminating Co.	1
July 26.	Atlantic avenue, between South Elliott place and Waverly avenue.....	Edison Electric Illuminating Co.	9
Aug. 4.	Atlantic avenue, between Washington and Nostrand avenues.....	Edison Electric Illuminating Co.	10
Aug. 10.	Seeley street, bridge over Prospect avenue.....	Flatbush Gas Co.....	2
Aug. 18.	Greene avenue, between Reid and Patchen avenues	Edison Electric Illuminating Co.	1
Aug. 26.	Bushwick avenue, in front of St. Catherine's Hospital	Edison Electric Illuminating Co.	1
Sept. 1.	Ridgewood avenue, southeast corner of Cleveland street	Edison Electric Illuminating Co.	1
Sept. 1.	Ridgewood avenue, southwest corner of Essex street	Edison Electric Illuminating Co.	1
Sept. 1.	Ridgewood avenue, northwest corner of Railroad avenue	Edison Electric Illuminating Co.	1
Sept. 1.	Sixth avenue, corner of Pacific street.....	Edison Electric Illuminating Co.	1
Sept. 9.	Metropolitan avenue, No. 2, bridge over Newtown Creek.....	Edison Electric Illuminating Co.	1
Oct. 23.	Bogart street, northwest corner of Varet street..	Edison Electric Illuminating Co.	1
Oct. 24.	Prospect Park lake.....	Edison Electric Illuminating Co.	10
Oct. 24.	Seaside Park beach.....	Edison Electric Illuminating Co.	10
Nov. 6.	Atlantic avenue, from Nostrand to Saratoga avenues	Edison Electric Illuminating Co.	16
Dec. 13.	Ninth street, bridge over Gowanus Canal.....	Edison Electric Illuminating Co.	2
Dec. 20.	Baltic street, between Columbia street and bulkhead	Edison Electric Illuminating Co.	2
Dec. 22.	Middleton street, north side, east of Wallabout street	Edison Electric Illuminating Co.	1
			155

	Lights.
Edison Electric Illuminating Company.....	153
Flatbush Gas Company	2
	155

Note—All electric street signs (346 in all) which were lighted by the Edison Electric Illuminating Company were discontinued March 31, 1905.

Welsbach Lamps Lighted During the Year 1905 by the Brooklyn Union Gas Company.

Date.	Location.	Number of Lights.
Jan. 1.	No. 116 Tompkins avenue.....	1
Jan. 1.	North Eighth street, between Havemeyer street and Union avenue.	6
Jan. 11.	Warwick street, between Atlantic and Ridgewood avenues.....	13
Feb. 8.	No. 128 Meserole avenue, church lights.....	2
Mar. 7.	New Jersey avenue, between Jamaica avenue and Fulton street..	3
Mar. 15.	Dean street, between Albany and Troy avenues.....	9
Mar. 21.	Duffield street, between Myrtle avenue and Fulton street.....	9
Mar. 21.	Cumberland street, between Park and Myrtle avenues.....	8
Mar. 26.	Wyona street, near Fulton street (church).....	2
April 10.	Pitkin avenue, between Snediker and Stone avenues.....	20
April 24.	Fulton street and Ashland place.....	1
May 11.	No. 193 Joralemon street.....	1
May 13.	Sherman street, between Ocean parkway and Reeve place.....	7
May 25.	Union street, between Brooklyn and Kingston avenues.....	3
May 25.	Tallman street, between Jay and Bridge streets.....	4
May 25.	North Elliott place, between Park avenue and Auburn place.....	5
June 3.	Twenty-first street, between Fifth and Sixth avenues.....	6
June 12.	Seventeenth street, between Third and Fifth avenues.....	12
June 15.	Monroe street, between Ralph and Howard avenues.....	4
June 16.	Hudson avenue, from Myrtle avenue to Bolivar street.....	4
June 16.	Fleet street, between Hudson avenue and Willoughby street.....	4
June 22.	Dumont avenue, 75 feet west of Watkins street.....	2
June 24.	Dodsworth street, between Broadway and Bushwick avenue.....	4
July 1.	Ninth street, east of Fourth avenue (church).....	2
July 1.	Dean street, between Albany and Kingston avenues.....	4
July 1.	Herkimer street, west of Schenectady avenue.....	2
July 1.	East Seventh street, between Reeve place and Ocean parkway....	7
July 1.	Fifty-third street, between Second and Sixth avenues.....	14
July 10.	Columbus place, between Atlantic avenue and Herkimer street...	2
July 20.	No. 338 Bridge street.....	1
July 21.	Atlantic avenue, from Saratoga avenue to City line.....	306
July 24.	Third place, between Clinton and Henry streets.....	3
July 24.	Tompkins place and Harrison street.....	2
July 24.	Rugby road, between Beverley road and Avenue C.....	7
July 24.	East Thirteenth street, between Cortelyou and Dorchester roads..	4
July 28.	Atlantic avenue, from Flatbush avenue to Washington avenue...	61
Aug. 1.	Reid avenue and Pulaski street.....	2
Aug. 1.	East Fourteenth street, between Cortelyou and Dorchester roads..	4
Aug. 4.	Atlantic avenue, between Washington and Nostrand avenues....	70
Aug. 12.	Twenty-fourth street, from Third to Sixth avenues.....	13
Aug. 18.	Saratoga avenue, between Atlantic avenue and Herkimer street..	2
Aug. 18.	Greene avenue, between Reid and Patchen avenues.....	7
Aug. 18.	Clinton street, east side, north of Livingston street.....	2
Aug. 26.	Bushwick avenue, in front of St. Catherine's Hospital.....	2
Sept. 1.	Ridgewood avenue, between Warwick street and Enfield street...	62
Sept. 1.	Windsor place, between Eighth and Tenth avenues.....	9
Sept. 1.	Tenth avenue, between Coney Island avenue and Windsor place..	5
Sept. 8.	Sixth street, between Fourth and Ninth avenues.....	24
Sept. 26.	Troutman street and Evergreen avenue.....	2
Oct. 1.	Dixon's alley, between York and Sands streets.....	3
Oct. 2.	Prospect avenue Southwest, west of Third avenue (church).....	2
Oct. 4.	Franklin avenue, opposite No. 638.....	1
Oct. 5.	Marlborough road, between Beverley and Cortelyou roads.....	7
Oct. 5.	No. 36 Stanhope street.....	1
Oct. 7.	Fifty-second street, between Fifth and Sixth avenues.....	6
Oct. 7.	Fifty-second street, between Second and Third avenues.....	5
Oct. 7.	Lincoln road, between Rogers and Nostrand avenues.....	4
Oct. 7.	Lincoln road, between Ocean and Flatbush avenues.....	3
Oct. 12.	No. 9 Dean street.....	1
Oct. 17.	Sixteenth street, between Tenth and Coney Island avenues.....	10
Oct. 18.	North Henry street, between Hubert and Richardson streets (church)	3
Oct. 18.	Java street, between Franklin street and Manhattan avenue (church)	2
Oct. 25.	East Sixteenth street, between Cortelyou and Dorchester roads...	4
Nov. 2.	Prospect place, between Underhill and Washington avenues.....	4
Nov. 4.	No. 59 Milton street (church).....	1
Nov. 4.	Prospect avenue, corner Greenwood avenue.....	2
Nov. 4.	Greenwood avenue, between East Seventh street and Prospect avenue	2
Nov. 6.	Atlantic avenue, between Nostrand and Saratoga avenues.....	162
Nov. 6.	Franklin avenue, east side, south of Myrtle avenue.....	1
Nov. 6.	Hale avenue, between Arlington and Ridgewood avenues.....	2
Nov. 6.	Nos. 179 to 183 South Ninth street (church).....	2
Nov. 7.	Navy street, west side, near York street.....	1
Nov. 10.	Eagle street, between Franklin street and Manhattan avenue....	2
Nov. 28.	Lenox road, from Flatbush avenue to Nostrand avenue.....	18
Nov. 28.	Bergen street, between Kingston and Albany avenues.....	4
Nov. 28.	Fort Hamilton avenue and East Fourth street (church).....	3

Date.	Location.	Number of Lights.
Dec. 1.	Wyona street, between Pitkin and Glenmore avenues (church)	2
Dec. 9.	Nos. 404 and 406 Lafayette avenue (church)	2
Dec. 9.	Cranberry street, between Henry street and Columbia Heights	10
Dec. 9.	Liberty avenue, between Wyona avenue and Bradford street	2
Dec. 10.	No. 53 Sutton street (church)	2
Dec. 12.	Middagh street, from Henry street to Columbia Heights	9
Dec. 12.	Poplar street, between Henry street and Columbia Heights	7
Dec. 12.	Poplar street, north of Poplar place	1
Dec. 12.	Hicks street, between Fulton and Orange streets	4
Dec. 12.	Willow street, between Cranberry and Middagh streets	1
Dec. 12.	Degraw street, between Brooklyn and Kingston avenues	5
Dec. 12.	New York avenue, between St. Mark's avenue and Prospect place.	1
Dec. 12.	New York avenue, between Prospect place and Park place	1
Dec. 12.	Degraw street, between Tompkins place and Clinton street	2
Dec. 16.	St. Edward's street, from Flushing avenue to Willoughby street	15
Dec. 16.	Leo place, from Myrtle avenue to St. Edward's street	4
Dec. 16.	Auburn place, east of St. Edward's street	1
Dec. 19.	No. 369 Stockholm street (church)	2
Dec. 21.	Alice court, north of Atlantic avenue	2
Dec. 21.	Agate court, north of Atlantic avenue	2
Dec. 21.	Watkins street, between Liberty and Pitkin avenues	5
Dec. 22.	Nos. 40 to 44 Greene avenue (church)	2
Dec. 22.	Middleton street, from Wallabout street to Throop avenue	14
Dec. 23.	New York avenue, east side, between Park place and Sterling place.	1
Dec. 23.	Halsey street, between Bedford and Nostrand avenues	2
Dec. 26.	Sixteenth street, from Fifth avenue to Prospect Park West	26
Dec. 26.	Jackson place, from Sixteenth street to Prospect avenue	5
Dec. 26.	Webster place, from Sixteenth street to Prospect avenue	4
Dec. 26.	Eighth street, from Eighth avenue to Prospect Park West	4
Dec. 26.	Sixteenth street, between Fourth and Fifth avenues	6
Dec. 30.	Sackett street, between Fourth and Fifth avenues	4
Dec. 30.	Tenth avenue, between Windsor place and Prospect avenue	3
Dec. 30.	Sterling place, between Brooklyn and Kingston avenues	4
Dec. 30.	Roebling street, South Eighth street and Division avenue	3
Dec. 30.	Henry street, west side, just south of Summit street (church)	2
Dec. 30.	Nostrand avenue, between Monroe and Hancock streets	4
	Total	1,169

Showing locations where Welsbach gas lamps (Brooklyn Union Gas Company) were discontinued during the year 1905:

Date.	Location.	Number of Lights.
Mar. 27.	Herkimer street, from New York avenue to Herkimer court	3
June 27.	Joralemon street, in front of Municipal Building	3
Aug. 5.	Bedford avenue, from Lincoln road to Newkirk avenue	13
Aug. 9.	South Ninth street and Marcy avenue	2
Sept. 1.	St. Mark's avenue, southwest corner Sixth avenue	1
Sept. 1.	Pacific street, street corners of Carlton avenue	2
Sept. 20.	Joralemon street, in front of Municipal Building	3
Nov. 18.	Joralemon street, in front of Municipal Building	3
Dec. 21.	Tompkins avenue, northeast and southwest corners Hancock street.	2
Dec. 21.	Tompkins avenue, northwest and southeast corners Lafayette avenue	2
Dec. 21.	Tompkins avenue, northwest and southeast corners Macon street.	2
	Total	36

Welsbach naphtha lamps lighted during the year 1905 by the Welsbach Street Lighting Company of America:

Date.	Location.	Number of Lights.
April 12.	Ocean parkway, north side, between Sherman street and Park circle	1
June 1.	City Park	21
June 29.	Ocean parkway, between Park circle and Prospect avenue	7
June 29.	Ocean parkway, between Sherman street and East Seventh street.	1
June 29.	East Eighth street, between Ocean parkway and Caton place	1
	Total	31

Open Flame Gas Lamps Lighted During the Year 1905.

Date.	Location.	Company.	Number of Lights.
Jan. 1.	Fifty-seventh street, northeast and southwest corners of Seventh avenue	Brooklyn Union Gas Co.	2
Jan. 11.	McKinley avenue, between Sheridan and Grant avenues	Brooklyn Union Gas Co.	2
Feb. 15.	Sheffield street, between Sutter and Livonia avenues	Brooklyn Union Gas Co.	15
Feb. 15.	Georgia avenue, between Sutter and Livonia avenues	Brooklyn Union Gas Co.	15
Feb. 15.	Alabama avenue, between Sutter and Livonia avenues	Brooklyn Union Gas Co.	15
Feb. 15.	Williams avenue, between Sutter and Livonia avenues	Brooklyn Union Gas Co.	15
Feb. 15.	Hinsdale avenue, between Sutter and Blake avenues	Brooklyn Union Gas Co.	4
Feb. 15.	Sutter avenue, between Sheffield and Hinsdale avenues	Brooklyn Union Gas Co.	6
Feb. 15.	Blake avenue, between Sheffield and Hinsdale avenues	Brooklyn Union Gas Co.	4
Feb. 15.	Dumont avenue, between Sheffield and Hinsdale avenues	Brooklyn Union Gas Co.	4
Feb. 15.	Livonia avenue, between Sheffield and Hinsdale avenues	Brooklyn Union Gas Co.	4
Mar. 11.	Greene avenue, 120 feet east of Wyckoff avenue.	Brooklyn Union Gas Co.	1
Mar. 11.	Greene avenue, 120 feet west of St. Nicholas avenue	Brooklyn Union Gas Co.	1
Mar. 21.	Macon street, north side, first west of Saratoga avenue	Brooklyn Union Gas Co.	1
Mar. 26.	Locust street, No. 37	Brooklyn Union Gas Co.	1
Apr. 11.	Ridgewood avenue, corner of Railroad avenue (church)	Brooklyn Union Gas Co.	2
Apr. 24.	East Twenty-third street, between Avenues F and G	Brooklyn Union Gas Co.	3
Apr. 30.	Macon street, between Saratoga and Hopkinson avenues	Brooklyn Union Gas Co.	3
May 5.	Fifty-seventh street, between Seventh and Eighth avenues	Kings County Lighting Co.	5
May 5.	Seventh avenue, between Fifty-seventh and Fifty-eighth streets	Kings County Lighting Co.	1
May 6.	New Jersey avenue, No. 27	Brooklyn Union Gas Co.	1
May 13.	President street, between Fourth and Fifth avenues	Brooklyn Union Gas Co.	5
May 15.	Prescott place, between Atlantic avenue and Herkimer street	Brooklyn Union Gas Co.	2
May 17.	Seventeenth street, east side, 100 feet east of Fifth avenue	Brooklyn Union Gas Co.	1
May 19.	Hill street, between Euclid avenue and Crescent street	Brooklyn Union Gas Co.	2
May 20.	East Thirty-first street, 100 feet north of Avenue H	Brooklyn Union Gas Co.	1
May 20.	Granite street, between Bushwick and Evergreen avenues	Brooklyn Union Gas Co.	4
June 1.	New Jersey avenue, between Dumont and Riverdale avenues	Brooklyn Union Gas Co.	5
June 10.	Essex street, between Pitkin avenue and New Lots road	Brooklyn Union Gas Co.	20
June 20.	Ames street, between East New York and Sutter avenues	Brooklyn Union Gas Co.	11
July 1.	Seventy-second street, between Fourth and Fifth avenues	Kings County Lighting Co.	6
July 1.	Dixons alley, Nos. 15 and 17	Brooklyn Union Gas Co.	1
July 10.	Fifty-seventh street, between Sixth and Seventh avenues	Brooklyn Union Gas Co.	6
July 15.	Milford street, between Pitkin avenue and New Lots road	Brooklyn Union Gas Co.	17
July 20.	Sanford street, No. 147	Brooklyn Union Gas Co.	1
July 22.	East Thirteenth street, between Kings highway and Avenue S	Brooklyn Borough Gas Co.	15
Aug. 1.	Douglass street, between Pitkin and Sutter avenues	Brooklyn Union Gas Co.	9
Aug. 1.	Christopher street, between East New York and Riverdale avenues	Brooklyn Union Gas Co.	22
August 4.	Forty-fourth street, between Sixth and Seventh avenues	Brooklyn Union Gas Co.	7
Aug. 5.	Jefferson avenue, between Knickerbocker and Irving avenues	Brooklyn Union Gas Co.	7
Aug. 16.	Bay Twenty-third street, between Eighty-sixth street and Benson avenue	Kings County Lighting Co.	6
Aug. 16.	Forty-first street, corner Thirteenth avenue	Kings County Lighting Co.	2
Aug. 16.	Sixty-third street, between Fourth and Fifth avenues	Kings County Lighting Co.	7
Aug. 16.	Sixteenth avenue, between Sixty-eighth and Sixty-ninth streets	Kings County Lighting Co.	3
Aug. 18.	Hawthorne street, between Nostrand and New York avenues	Brooklyn Union Gas Co.	3
Sept. 22.	Howard avenue, between St. Mark's avenue and Park place	Brooklyn Union Gas Co.	5
Sept. 23.	Thatford avenue, between Belmont and Sutter avenues	Brooklyn Union Gas Co.	2
Sept. 23.	Stone avenue, between Dumont and Riverdale avenues	Brooklyn Union Gas Co.	10
Oct. 1.	Montauk avenue, between Pitkin avenue and New Lots road	Brooklyn Union Gas Co.	15
Oct. 2.	Berriman street, between Belmont avenue and New Lots road	Brooklyn Union Gas Co.	13
Oct. 7.	East Twenty-second street, north of Avenue G	Brooklyn Union Gas Co.	2
Oct. 15.	Hart street, Nos. 834 and 842	Brooklyn Union Gas Co.	2
Oct. 15.	Hart street, first and second west of Irving avenue	Brooklyn Union Gas Co.	2
Nov. 1.	Eighth street, south side, first west of Third avenue	Brooklyn Union Gas Co.	1
Nov. 1.	Eighth street, south side, first east of Seventh avenue	Brooklyn Union Gas Co.	1
Nov. 1.	St. John's place, first, east of Albany avenue	Brooklyn Union Gas Co.	1
Nov. 1.	Forty-fifth street, between Fifteenth and Sixteenth avenues	Kings County Lighting Co.	5
Nov. 1.	Fifteenth avenue, between Sixtieth and Sixty-seventh streets	Kings County Lighting Co.	16
Nov. 1.	Crescent street, between Liberty and Pitkin avenues	Brooklyn Union Gas Co.	2
Nov. 3.	Stone avenue, between Glenmore and Belmont avenues	Brooklyn Union Gas Co.	3
Nov. 11.	Seventy-second street, between Fifth and Sixth avenues	Kings County Lighting Co.	7
Nov. 21.	East Thirty-eighth street, between Avenue D and Foster avenue	Brooklyn Union Gas Co.	4
Nov. 21.	East Thirty-ninth street, between Avenue D and Foster avenue	Brooklyn Union Gas Co.	5
Nov. 21.	East Fortieth street, between Avenue D and Foster avenue	Brooklyn Union Gas Co.	5
Nov. 21.	Avenue D, between East Thirty-eighth and East Fortieth streets	Brooklyn Union Gas Co.	6
Nov. 25.	Saratoga avenue, between Pitkin and Sutter avenues	Brooklyn Union Gas Co.	9
Dec. 9.	Degraw street, between Classon and Washington avenues	Brooklyn Union Gas Co.	3
Dec. 9.	Sixtieth street, between Second and Third avenues	Brooklyn Union Gas Co.	2
Dec. 15.	Blake avenue, between Van Sicklen avenue and New Lots road	Brooklyn Union Gas Co.	26
Dec. 15.	Sixty-fifth street, between Nineteenth and Thirteenth avenues	Kings County Lighting Co.	24
Dec. 18.	Havemeyer street, between Grand and South First streets	Brooklyn Union Gas Co.	2
Dec. 23.	Eighty-third street, between Second and Third avenues	Kings County Lighting Co.	5
Dec. 23.	Eighty-fourth street, between Second and Third avenues	Kings County Lighting Co.	5
Dec. 23.	Eighty-second street, between Tenth and Eleventh avenues	Kings County Lighting Co.	6
Dec. 30.	Seventy-third street, between Fifth and Sixth avenues	Kings County Lighting Co.	6
Dec. 30.	East Fifteenth street, between Caton and Church avenues	Brooklyn Union Gas Co.	5
Dec. 30.	Fifty-eighth street, between Sixteenth and Seventeenth avenues	Kings County Lighting Co.	5
Dec. 30.	Fifth avenue, between Sixtieth street and Fort Hamilton avenue	Kings County Lighting Co.	59
Dec. 30.	Bay parkway, between Second avenue and Shore road	Kings County Lighting Co.	13
Dec. 30.	Fourteenth avenue, southwest corner Fifty-fifth street (church)	Kings County Lighting Co.	2
Dec. 30.	Bay Ridge avenue, west of Third avenue	Kings County Lighting Co.	1
Dec. 30.	Seventy-second street, between Third and Fourth avenues	Kings County Lighting Co.	4
Dec. 30.	Seventy-first street, between Sixteenth and Seventeenth avenues	Kings County Lighting Co.	5
Dec. 30.	Homecrest avenue, between Avenues T and U	Brooklyn Borough Gas Co.	4
Nov. 6.	East Twenty-first street, between Ditmas and Newkirk avenues	Brooklyn Union Gas Co.	2
Dec. 15.	East Fourteenth street, between Kings highway and Avenue U	Brooklyn Borough Gas Co.	28
Dec. 16.	East Seventeenth street, between Avenues T and U	Brooklyn Borough Gas Co.	8
	Total		599

Recapitulation.

Brooklyn Union Gas Company, lamps lighted during 1905	351
Brooklyn Borough Gas Company, lamps lighted during 1905	55
Kings County Lighting Company, lamps lighted during 1905	193
Total open flame gas lamps lighted during the year 1905	599

Showing Locations Where Open Flame Gas Lamps (Brooklyn Union Gas Company) Were Capped and Discontinued During the Year 1905.

Date.	Location.	Number of Lights.
Jan. 1.	North Eighth street, between Havemeyer street and Union avenue	5
Jan. 11.	Warwick street, between Atlantic and Ridgewood avenues	13
Jan. 20.	Atlantic avenue, northwest corner New York avenue	1
Mar. 15.	Dean street, northwest and southeast corner Troy avenue	2
Mar. 21.	Duffield street, between Myrtle avenue and Fulton street	7
Mar. 21.	Cumberland street, between Park and Myrtle avenues	8
Mar. 26.	Wyona street, near Fulton street	2
Apr. 10.	Pitkin avenue, between Snediker and Stone avenues	14
Apr. 17.	Macon street, between Saratoga and Hopkinson avenues	3
May 15.	Avenue G, between Flatbush and Ocean avenues	15
May 19.	Morgan avenue, southwest corner Metropolitan avenue	1
May 19.	Morgan avenue, southwest corner Maujer street	1
May 19.	Maujer street, north side First, west of Morgan avenue	1
May 19.	Dixon's alley, between Prospect and Sands streets	1
May 25.	North Elliott place, between Park avenue and Auburn place	1
June 3.	Twenty-first street, between Fourth and Fifth avenues	4
June 12.	Seventeenth street, between Third and Fifth avenues	12
June 16.	Hudson avenue, between Myrtle avenue and Bolivar street	2
June 16.	Fleet place, between Hudson avenue and Willoughby street	3
June 22.	Dumont avenue, west of Watkins street	1
June 24.	Dodworth street, between Broadway and Bushwick avenue	2
July 1.	Dean street, between Albany and Troy avenues	4
July 1.	Herkimer street, west of Schenectady avenue	1
July 1.	Fifty-third street, between Second and Sixth avenues	14
July 10.	Columbus place, between Atlantic avenue and Herkimer street	2
July 21.	Atlantic avenue, southeast corner Fountain avenue	1
July 27.	Atlantic avenue, southwest corner Sixth avenue	1
July 27.	Atlantic avenue, northeast corner South Portland avenue	1
Aug. 1.	No. 324 Pearl street	1
Aug. 4.	Atlantic avenue, south side Bedford and Nostrand avenues	5
Aug. 4.	Atlantic avenue, between Bedford avenue and Perry place	1
Aug. 4.	Atlantic avenue, northeast corner Perry place	1
Aug. 4.	Atlantic avenue, 29 feet east of Nostrand avenue	1
Aug. 4.	Atlantic avenue, northeast corner Nostrand avenue	1
Aug. 4.	Atlantic avenue, Nos. 1179, 1197, 1205, 1215, 1225	5
Aug. 5.	Bedford avenue, from Maple street to Tilden avenue	9
Aug. 10.	Twenty-fourth street, between Third and Sixth avenues	12
Sept. 1.	Ridgewood avenue, from Ashford street to Lincoln avenue	31
Sept. 1.	Windsor place, between Ninth and Tenth avenues	5
Sept. 1.	Tenth avenue, northwest and southeast corners Sixteenth street	2
Sept. 1.	Pacific street, betwteen Flatbush and Vanderbilt avenues	12
Sept. 7.	Fifth avenue, between Atlantic avenue and Pacific street	1
Sept. 8.	Sixth street, between Fourth and Ninth avenues	22
Sept. 11.	Rockaway avenue, southeast corner Glenmore avenue	1
Sept. 11.	Rockaway avenue, southeast corner Blake avenue	1
Sept. 11.	Rockaway avenue, northeast corner Belmont avenue	1
Sept. 11.	Glenmore avenue, east of Rockaway avenue	1
Sept. 11.	Belmont avenue, east of Rockaway avenue	1
Sept. 11.	Sutter avenue, east of Rockaway avenue	1
Sept. 11.	Dumont avenue, east of Rockaway avenue	1
Sept. 11.	Sullivan street, near bulkhead	1
Sept. 11.	Warwick street, between Atlantic and Liberty avenues	1
Oct. 1.	Dixon's alley, between York and Sands streets	1
Oct. 2.	Prospect avenue, west of Third avenue	1
Oct. 1.	Dixon's alley, between York and Sands streets	1
Oct. 7.	Fifty-second street, between Fifth and Sixth avenues	6
Oct. 7.	Lincoln road, from Rogers to Nostrand avenue	4
Oct. 7.	Lincoln road, between Ocean and Flatbush avenues	3
Oct. 17.	Sixteenth street, from Tenth avenue to Coney Island avenue	10
Oct. 15.	Avenue H, corner East Seventeenth, East Eighteenth and East Nineteenth streets	3
Nov. 1.	Seventh street, south side First, east of Fourth avenue	1
Nov. 4.	Prospect place, between Underhill and Washington avenues	2
Nov. 4.	Atlantic avenue, between Nostrand and Ralph avenues	63
Nov. 24.	Sullivan street, foot of the street	1
Nov. 28.	Bergen street, between Kingston and Albany avenues	4
Nov. 28.	Lenox road, between Flatbush and Nostrand avenues	13
Dec. 6.	East New York avenue, southwest corner Saratoga avenue	1
Dec. 6.	East New York avenue, southeast corner Douglass street	1
Dec. 6.	Saratoga avenue, east side First, south of East New York avenue	1
Dec. 6.	Douglass street, east side First, south of East New York avenue	1
Dec. 9.	Diamond street, northwest corner Meserole avenue	1
Dec. 9.	Cranberry street, between Fulton street and Columbia Heights	6
Dec. 12.	Middagh street, between Henry street and Columbia Heights	8
Dec. 12.	Poplar street, between Henry street and Columbia Heights	6
Dec. 12.	Poplar place, north of Poplar street	1
Dec. 12.	Hicks street, between Fulton and Orange streets	4
Dec. 12.	Willow street, between Cranberry and Middagh streets	1
Dec. 12.	New York avenue, between St. Mark's place and Park place	2
Dec. 13.	Saratoga avenue, between St. Mark's place and Park place	4
Dec. 13.	Bergen street, east of Saratoga avenue	1
Dec. 13.	St. Mark's avenue, east of Saratoga avenue	1
Dec. 13.	Prospect place, east of Saratoga avenue	1
Dec. 13.	Park place, east of Saratoga avenue	1
Dec. 16.	St. Edwards street, between Leo place and Auburn place	14
Dec. 19.	No. 369 Stockholm street	2
Dec. 21.	Alice court, north of Atlantic avenue	2
Dec. 21.	Agate court, north of Atlantic avenue	2
Dec. 21.	Watkins street, east side, between Liberty and Glenmore avenues	2
Dec. 21.	Tompkins avenue, between Kosciusko street and Lafayette avenue	1
Dec. 21.	Tompkins avenue, between McDonough and Decatur streets	1
Dec. 22.	Middleton street, between Lee and Throop avenues	9
Dec. 26.	Sixteenth street, from Fifth avenue to Prospect Park West	23
Dec. 26.	Jackson place, between Sixteenth street and Prospect avenue	5
Dec. 26.	Webster place, between Sixteenth street and Prospect place	4
Dec. 26.	Sixteenth street, between Fourth and Fifth avenues	5
Dec. 30.	Sackett street, between Fourth and Fifth avenues	4
Dec. 30.	Sterling place, between Brooklyn and Kingston avenues	4
Dec. 30.	Nostrand avenue, between Monroe and Hancock streets	4
	Total	481

Note—All gas street sign lamps (303 in all) which were lighted by the Brooklyn Union Gas Company, were capped and discontinued during March, 1905.

Showing the number of public and administration buildings in the Borough of Brooklyn, the lighting of which is paid for from the account of Lamps and Lighting; the number of meters (gas and electric) in each building, which are read every month by the Bureau Inspectors:

Buildings.	Number of Buildings.	Number of Gas Meters.	Number of Electric Meters.
Borough Hall	1	1	2
Municipal Building	1	1	3
Kings County Court House	1	2	6
Hall of Records	1	1	3
Kings County Jail	2	2	1
Department Storehouse	1	1	1
Public Buildings and Offices	1	1	..
Wallabout Market, Administration Building	1	..	1
City Clock Towers	2	2	..
Municipal Courts	2	2	..
Magistrate's Court	4	4	..
Children's Court	1	..	1
Disciplinary Training School	1	1	..
Exempt Firemen's Association	1	1	..
Public Comfort Stations	6	6	12
Public Baths (Interior)	5	5	10
Public Baths (Floating)	4	4	..
Photometric Stations	3	6	..
Law Department, Bureau of Street Openings	1	..	1
Armories	8	32	19
Department of Water Supply, Gas and Electricity	16	17	3
Department of Police	43	40	10
Fire Department	75	70	10
Department of Education	177	237	115
Department of Street Cleaning	36	28	11
Department of Parks	8	1	9
Department of Sewers	1	1	..
Department of Health	6	5	2
Department of Charities	19	20	7
Department of Correction	3	3	..
Total	431	494	227

IV.—D.

Department of Water Supply, Gas and Electricity,
Bureau of Water Rates, Borough of Brooklyn,
January 8, 1906.

Hon. WILLIAM F. COZIER, *Deputy Commissioner:*

Dear Sir—I have the honor to transmit herewith the annual detailed statement of the receipts of this Bureau for the year ending December 31, 1905, a statement for comparison showing the annual receipts of the Bureau from 1895 to 1905, inclusive, and a statement showing the new meters set during the year.

The comparative statement for 1904 and 1905 shows a substantial increase all along the line, the total increase being $262,960.22. The total receipts of $2,725,444.09 are the largest annual receipts in the history of the Bureau. The large increase is the result of the very extensive building operations which have prevailed in this borough during the past two years.

The storage facilities for the old records of the Bureau are very poor; several requests have been made on the Bureau of Public Buildings and Offices for relief, but none has as yet been granted.

I respectfully renew my request for an addition to the office force, as made in my report for 1904. The office force has been reduced since January 1, 1904, through deaths and resignations, by six Clerks, and increased by the transfer of two Clerks to this Bureau—a net reduction of four.

The correct and punctual transaction of the business of this office demands the appointment of at least three new Clerks, and in my opinion the increased business of the office fully warrants such appointments.

Respectfully,

WM. R. McGUIRE, Water Register.

Water Rates Collected During the Year Ending December 31, 1905.

	Regular.	Meters.	Penalty.	Building.	Labor and Material.	Taps.	Total.
January	$15,129 00	$78,977 58	$1,779 61	$1,834 20	$168 58	$469 00	$98,307 97
February	13,001 59	24,964 96	1,649 83	1,251 80	227 79	179 00	41,274 97
March	13,616 59	52,621 63	1,633 25	6,317 35	830 49	1,312 75	76,332 06
April	15,753 14	118,354 55	1,874 03	6,155 16	2,082 10	2,525 25	146,744 23
May	372,219 21	148,608 18	2,187 80	7,434 60	1,600 86	2,529 75	534,580 40
June	329,812 11	63,711 30	2,168 48	6,701 68	27 15	1,938 50	404,359 22
July	686,794 39	45,424 63	2,468 73	6,059 65	686 82	2,303 00	743,737 22
August	108,627 61	23,796 05	2,750 51	6,345 35	92 56	2,092 50	143,704 58
September	35,698 02	58,065 91	1,805 91	7,021 45	510 38	2,402 75	105,504 42
October	64,207 70	137,142 42	2,987 89	5,658 30	967 43	2,599 25	213,562 99
November	23,777 78	110,368 96	2,925 16	5,641 35	240 06	2,276 25	145,229 56
December	19,842 12	43,050 46	2,601 36	4,134 86	242 17	2,235 50	72,106 47
Total	$1,698,479 26	$905,086 63	$26,832 56	$64,555 75	$7,626 39	$22,863 50	$2,725,444 09
1904	1,608,428 28	775,869 84	25,952 30	36,769 23	1,951 72	13,512 50	2,462,483 87
Increase	$90,050 98	$129,216 79	$880 26	$27,786 52	$5,674 67	$9,351 00	$262,960 22

1905.

Reported by Department of Taxes	$87,024 86
Reported by Department of Arrears	129,198 17
	$216,223 03

1904.

Reported by Department of Taxes	$82,907 61
Reported by Department of Arrears	137,028 66
	$219,936 27

Statement of Receipts from 1895 to 1905.

1895	$1,714,243 04
1896	1,769,321 25
1897	1,845,707 18
1898	1,771,620 15
1899	1,913,088 19
1900	1,926,294 35
1901	2,448,402 12
1902	2,418,352 88
1903	2,477,703 81
1904	2,462,483 87
1905	2,725,444 09

STATEMENT OF SETTINGS, DISCONTINUANCES AND METERS IN USE DURING THE YEAR ENDING DECEMBER 31, 1905.

Meters in Use December 31, 1905.

	5/8	3/4	1	1½	2	3	4	6	10	Total.
Worthington	242	81	237	133	325	114	87	8	..	1,227
Thomson	1,625	198	350	109	149	39	44	23	..	2,537
Trident	1,151	124	142	67	85	19	10	8	..	1,606
Crown	739	175	248	65	109	12	13	..	..	1,361
Nash	78	16	18	6	8	2	1	..	..	129
Standard	114	10	7	3	6	1	..	..	..	141
Hersey	12	..	..	2	..	1	1	..	..	16
Gem	3	..	..	2	66	26	38	8	1	144
Miscellaneous	..	6	3	..	..	..	2	..	..	11
Total	3,964	610	1,005	387	748	214	196	47	1	7,172

Discontinuances.

	5/8	3/4	1	1½	2	3	4	Total.
Worthington	4	2	2	10	7	2	3	30
Thomson	47	1	8	3	4	2	2	67
Trident	25	..	2	..	..	..	1	28
Crown	16	4	6	2	1	..	..	29
Nash	1	..	..	..	..	..	..	1
Standard	1	..	..	..	..	..	..	1
Hersey	3	..	..	..	..	..	..	3
Gem	..	..	..	..	..	1	2	3
Total	97	7	18	15	12	5	8	162

Memo.—Twenty-eight of the above meters were transferred to Queens County and accounts closed on the books of this office.

Settings.

	5/8	3/4	1	1½	2	3	4	6	Total.
Worthington	96	7	43	25	45	16	15	4	251
Thomson	112	20	28	12	22	5	3	5	207
Trident	77	5	17	17	17	2	1	2	138
Crown	12	2	2	2	7	..	..	..	25
Nash	4	2	7	1	4	..	..	..	18
Standard	11	1	3	..	1	..	..	..	16
Hersey	2	..	..	2	..	..	..	..	4
Total	314	37	100	59	96	23	19	11	659

IV—E.

Department of Water Supply, Gas and Electricity,
Office of Supplies and Accounts, Municipal Building, Room 45,
Brooklyn, February 17, 1906.

Hon. WILLIAM C. COZIER, Deputy Commissioner:

Dear Sir—I beg to transmit herewith for incorporation in report for 1905 the following statements:

A—Amounts available and expenditures during 1905, and balances and estimated liabilities, January 1, 1906.

B—Distribution of expenditures on 1905 accounts.

Respectfully yours,

J. J. FLANNERY, Bookkeeper.

Statement Showing Amounts Available and Expenditures During 1905, and Balances and Estimated Liabilities January 1, 1906.

	Amounts Available During 1905.	Expenditures, January 1 to December 31, 1905.	Balances, January 1, 1906.	Estimated Liabilities, January 1, 1906.
Appropriation Accounts.				
Salaries, Office of Water Registrar, 1903.	$600 00	$600 00	.....	.....
Salaries, Lighting and Electricity, 1904..	92 45	36 90	$55 55	.....
Lamps and Lighting, 1904	712,192 07	46,575 46	665,616 61	*.....
Rentals of Fire Hydrants, 1904	6,250 00	6,250 00	.....	.....
Supplies and Contingencies, 1904	2,180 17	699 30	1,480 87	$20 00
Salaries, Office of Deputy Commissioner, 1905	11,080 00	10,987 50	92 50	.....
Salaries, Office of Water Registrar, 1905	50,900 00	50,621 07	278 93	.....
Salaries, Laboratory, 1905	7,300 00	7,237 58	62 42	.....
Salaries, Lighting and Electricity, 1905..	43,556 00	43,120 26	435 74	44 77
Lamps and Lighting, 1905	1,102,585 85	163,699 00	938,886 85	*.....
Rentals of Fire Hydrants, 1905	25,000 00	18,750 00	6,250 00	6,250 00
Supplies and Contingencies, 1905	8,600 00	5,295 68	2,704 32	2,353 40
		$353,872 75		
Water Revenue Accounts.				
Maintenance and Repairs, Materials and Supplies, 1900	$465 00	$465 00	.....	.....
Maintenance and Distribution of Water Supply, 1902	50,080 47	37 60	$50,042 87	$1,000 00
Maintenance and Distribution of Water Supply, 1903	7,023 75	1,783 45	5,240 30	1,000 00
Maintenance and Distribution of Water Supply, 1904	324,699 26	303,746 42	20,952 84	7,835 42
Maintenance and Distribution of Water Supply, 1905	1,525,221 93	1,117,425 78	407,796 15	361,427 86
		$1,423,458 25		
Bond Accounts.				
Water Fund	$1,921,431 66	$667,491 64	$1,253,940 02	$886,129 62
Water Main Fund	62,842 65	31,455 42	31,387 23	3,797 51
Water Construction	658,746 57	7,268 92	651,477 65	.....
High Pressure Service, etc	1,461,815 28	332,534 90	1,129,280 38	681,226 10
		$1,038,750 88		
Special Accounts.				
Revenue Bond Fund, Judgments	$1,797 20	$1,797 20	.....	.....

*The liabilities on these accounts are indeterminate, as the adjustment of many claims against them are dependent upon decision in legal proceedings.

Recapitulation of Expenditures.

Appropriation accounts	$353,872 75
Water revenue accounts	1,423,458 25
Bond accounts	1,038,750 88
Special accounts	1,797 20
	$2,817,879 08

DISTRIBUTION OF EXPENDITURES.

Maintenance and Distribution of Water Supply, 1905.

	Salaries.	Supplies.
Ridgewood Pumping Station	$172,417 49	$35,848 62
Ridgewood Reservoir	7,774 67	532 83
Mt. Prospect Pumping Station	24,609 22	4,855 12
Mt. Prospect Reservoir	8,279 31	321 95
Gravesend Pumping Station	12,298 73	2,133 57
New Utrecht Pumping Station	9,159 87	376 88
New Lots Pumping Station	10,574 38	1,039 19
Spring Creek Pumping Station	8,435 01	669 82
Shetucket Pumping Station	1,703 34	197 00
Oconee Pumping Station	7,184 19	334 50
Baiseleys Pumping Station	4,855 80	308 61
Jameco Pumping Station	8,863 89	368 51
Springfield Pumping Station	8,799 14	724 15
Forest Stream Pumping Station	7,636 79	489 98
Clear Stream Pumping Station	6,777 47	387 93
Watts Pond Pumping Station	7,078 36	289 40
Smith's Pond Pumping Station	6,902 95	355 38
Millburn Pumping Station	25,471 45	6,367 96
Agawam Pumping Station	5,095 49	277 38
Merrick Pumping Station	4,639 19	341 76
Matowa Pumping Station	5,630 60	192 70
Wantagh Pumping Station	4,437 14	577 10
Massapequa Pumping Station	6,047 16	158 11
Temporary Plant, Spring Creek	536 89	2 00
Temporary Plant, New Lots	156 90	.....
Temporary Plant, Massapequa	.....	.....
Temporary Plant, Station "D"	.....	.....
Temporary Plant, Station "L"	540 06	13 75
Temporary Plant, Station "N"	.....	.....
Springfield Filter Plant	2,558 25	1,173 87
Jameco Filter Plant	2,549 50	2,291 96
Mt. Prospect Laboratory	2,457 75	739 93
Conduits and Reservoirs	63,647 74	6,926 20
Repairs to Building	22,143 10	2,575 36
Repairing and Driving Wells	17,530 56	9,982 21
Engineer's Office	25,519 94	6,665 39
Contingencies—Maintenance	38 00	3,037 50
Taxes	.....	14,527 19
Coal for Pumping	.....	152,386 34
Transportation of Employees, etc	.....	6,731 25
Queens County Water Company's Contract	.....	21,475 10
Hydrants, Pipes, etc	.....	6,943 28
Western District Repair Yard	83,917 46	12,845 05

	Salaries.	Supplies.
Eastern District Repair Yard	45,963 24	4,631 87
Coney Island Repair Yard	40,243 92	3,534 83
East New York Repair Yard	33,301 87	3,154 49
Gowanus Pipe Yard	13,884 41	957 76
Superintendent of Repairs Office	29,052 99	287 59
Contingencies—Distribution	.....	6,034 72
Bureau of Water Registrar	31,066 64	960 48
Office of Deputy Commissioner	.....	762 65
Office of Supplies and Accounts	11,740 71	114 99
Total	$791,521 57	$325,904 21

Supplies and Contingencies, 1905.

	Salaries.	Supplies.
Office of Deputy Commissioner	.....	$582 10
Office of Chief Engineer	.....	613 45
Office of Supplies and Accounts	.....	394 78
Bureau of Water Registrar	.....	670 42
Bureau of Lamps and Lighting	.....	534 55
Bureau of Electricity and Gas	.....	1,286 57
Mt. Prospect Laboratory	.....	1,213 81
Total	.....	$5,295 68

Water Fund.

	Salaries.	Supplies.
Boilers at Millburn Pumping Station	.....	$1,350 00
Filter Plants	$2,531 41	11,946 89
Additional Driven Wells, Stations, etc.	4,583 31	33,830 16
Additional Lands	4,900 97	74,808 55
Test Wells	200 00	523 00
Water Mains	41,491 26	412,827 87
Remodeling Gravesend Pumping Station	286 87	9,920 66
Remodeling New Lots Pumping Station	765 73	10,020 60
Remodeling Ridgewood Pumping Station, north side	532 85	.....
Remodeling Ridgewood Pumping Station, south side	532 87	.....
Additional Conduit	773 39	.....
Massapequa Infiltration Gallery	560 00	49,355 00
Construction of Road at Storage Reservoir, Hempstead	.....	5,000 00
Temporary Pumping Plants—		
New Lots	.....	35 00
Oconee	.....	25 00
Storage Reservoir	.....	56 19
Massapequa	.....	231 19
Station "D"	.....	27 71
Station "L"	.....	312 45
Station "N"	.....	62 71
Total	$57,158 66	$610,332 98

High Pressure Fire Service.

	Salaries.	Supplies.
Central Plant, Mains, etc.	$29,782 39	$225,809 89
Central Plant, Joralemon Street Building	.....	930 00
Central Plant, St. Edward's Street Building	.....	720 00
Coney Island Plant, Mains, etc.	4,877 22	26,959 12
Coney Island Plant, Building	2,100 20	9,651 91
Coney Island Plant, Engines and Pumps	.....	24,781 35
Contingencies	2,272 20	4,650 62
Total	$39,032 01	$293,502 89

V.

Department of Water Supply, Gas and Electricity,
Borough of Queens,
Long Island City, January 11, 1906.

WILLIAM B. ELLISON, Esq., Commissioner, Nos. 13 to 21 Park Row, New York City:

Dear Sir—The following is a statement of water rents and charges collected and deposited for the year ending December 31, 1905:

Annual frontage and extra rates	$54,562 90
Penalties on deferred payments of annual rates	1,312 83
Meter rates for water supplied to buildings	103,343 09
Charges for water supplied for building purposes	3,171 37
Charges for water supplied for miscellaneous purposes	289 45
Charges for permits to tap mains	2,000 75
Total receipts for the year	$164,680 39
Arrears—Amounts returned to Bureau of Arrears	24,535 06
Total revenue for the year	$189,215 45

Yours very respectfully,
CHAS. C. WISSEL,
Deputy Commissioner, Queens.

Department of Water Supply, Gas and Electricity,
Borough of Queens,
Long Island City, January 23, 1906.

Hon. WILLIAM B. ELLISON, Commissioner of Water Supply, Gas and Electricity, Nos. 13 to 21 Park Row, New York City:

Dear Sir—Enclosed please find report, original and duplicate, of electrical transactions of the Borough of Queens for the quarter ending December 31, 1905.

Yours very respectfully,
CHAS. C. WISSEL,
Deputy Commissioner, Queens.

REPORT OF ELECTRICAL TRANSACTIONS, BOROUGH OF QUEENS, DURING THE QUARTER ENDING DECEMBER 31, 1905.

Exterior Wiring Permits Issued.

Company.	October.	November.	December.	Total.
New York and New Jersey Telephone Company	290	318	205	813
New York and Queens Electric Light and Power Company	153	105	87	345
Western Union Telegraph Company	5	....	....	5
New York and Queens County Railway Company	1	1	2	4
Long Island Electric Railway Company	2	....	....	2
Queens Borough Gas and Electric Company	1	....	....	1
Consolidated Fire Alarm Company	1	....	....	1
Postal Telegraph Cable Company	....	1	....	1
Brooklyn Heights Railroad Company	....	....	1	1
Long Island Railroad Company	....	....	5	5
	453	425	300	1,178
Subways—				
New York and New Jersey Telephone Company	5	....	8	13
Long Island Railroad Company	....	....	1	1
Subsidiaries—				
New York and New Jersey Telephone Company	2	4	4	10
New York and Queens Electric Light and Power Company	3	2	3	8
Conductors—				
New York and Queens Electric Light and Power Company	2	3	4	9
New York and New Jersey Telephone Company	....	1	3	4
Long Island Railroad Company	....	....	6	6
Total	465	435	329	1,229
For What Purpose—				
Erect poles	6	1	2	9
Erect poles and wires	41	27	29	97
Erect poles, wires and city lamp	8	3	1	12
Erect guy stubs	1	1	1	3
Replace poles and wires	16	8	31	55
Reset poles	4	5	12	21
String wires	371	376	218	965
String wires and hang lamp	6	3	2	11
Remove poles and wires	....	1	4	5
Subways	5	....	9	14
Subsidiaries	5	6	7	18
Conductors	2	4	13	19
Total	465	435	329	1,229

Total number of permits granted for telegraph and signal	847
Total number of permits granted for electric light and power	382
Total	1,229

Complaints.

	October.	November.	December.	Total.
Total number of complaints issued	30	57	35	122
Total number of complaints attended to	31	43	66	140
Complaints Issued.				
New York and Queens Electric Light and Power Company	7	12	4	23
S. L. Hill	1	....	....	1
W. H. Mimnus	1	....	....	1
A. Eschwei	2	....	....	2
S. May & Co	1	....	....	1
J. Livingston	1	....	....	1
B. R. Sharp	1	1	....	2
W. M. Sheehan & Co	1	1	....	2
New York and Queens County Railway Company	1	....	2	3
A. L. Percival & Co	2	1	....	3
Long Island Electric Railway Company	1	....	....	1
Cassidy & Son Manufacturing Company	1	....	....	1
Brown & McClure	1	1	1	3
Nichols Gas Fixture Manufacturing Company	1	....	....	1
F. M. Capach	3	....	2	5
Mary C. Hill	1	....	....	1
A. Koehn	1	....	....	1
Degnon Contracting Company	1	....	....	1
S. Horwitz	1	....	....	1
J. C. Schley	1	1	1	3
I. M. Meyer	....	1	....	1
Highway Department	....	3	1	4
New York and New Jersey Telephone Company	....	6	6	12
P. Daufkirch	....	1	....	1

	October.	November.	December.	Total.
R. A. Schoenberg Company	....	1	1	2
J. Hecht	....	1	....	1
J. A. Wright	....	1	....	1
A. Newberger	....	2	....	2
F. Pearce & Co.	....	1	....	1
Commercial Construction Company	....	1	....	1
J. M. Leach	....	1	....	1
William Tyler	....	1	....	1
National Electric Sign Company	....	1	....	1
F. W. Alexander	....	1	....	1
Collins Iron Works	....	2	....	2
D. S. Holcomb	....	1	....	1
P. O'Rorke	....	1	....	1
L. Gailey	....	1	....	1
P. Lohn	....	1	....	1
T. F. Jackson	....	2	....	2
A. Doncourt	....	1	....	1
Queens Borough Gas and Electric Company	....	1	1	2
P. Achtellik	....	1	....	1
G. B. Chaffer	....	1	2	3
J. Kelly	....	1	1	2
National Bridge Company	....	1	....	1
Jersey City Electrical Company	....	1	....	1
A. B. Simpson	....	1	2	3
E. M. Neest	....	1	....	1
F. V. Seaman	....	1	....	1
Bissell Bros.	....	....	1	1
Sanitary Brush Company	....	....	1	1
G. C. Ochsen	....	....	1	1
Astoria Marble Company	....	....	1	1
C. Smith	....	....	1	1
H. P. Lee	....	....	1	1
R. P. Buckland	....	....	1	1
Roeser & Sommer	....	....	1	1
Reedy Elevator Company	....	....	1	1
Albert Gas Fixture Company	....	....	1	1
J. Fleischhauer	....	....	1	1
Total	30	57	35	122

There are 365 complaints left over, which are being attended to.

Interior Wiring Applications Received and Certificates Granted During the Quarter Ending December 31, 1905.

	Applications.	Certificates.	Incandescent Lights.	Arc Lights.	Mains.	Motors. H.P.	Gererators. K.W.
October	144	91	6,708	6	1	19 — 238⅞	3 — 86¾
November	153	139	3,626	54	1	13 — 64	1 — 75
December	137	140	3,399	29	3	22 — 11,505½	10 — 9,185
Total	434	370	13,733	89	5	54 — 11,808⅜	14 — 9,346¾

Total number of applications left over	536
Total number of inspections made by Inspectors	6,473

Poles and Wires Removed by the Different Companies During the Quarter Ending December 31, 1905.

Company.	October. Poles.	October. Wires.	November. Poles.	November. Wires.	December. Poles.	December. Wires.	Total. Poles.	Total. Wires.
		Miles.		Miles.		Miles.		Miles.
New York and New Jersey Telephone Company	..	2.40	..	12.63	5	3.08	5	18.11
New York and Queens Electric Light and Power Company	..	.86	..	.63	7	.60	7	2.09
Total	..	3.26	..	13.26	12	3.68	12	20.20

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Department of Water Supply, Gas and Electricity,
Borough of Queens,
Long Island City, February 15, 1906.

Hon. WILLIAM B. ELLISON, Commissioner of Water Supply, Gas and Electricity, Nos. 13 to 21 Park Row, New York City:

Dear Sir—I herewith forward to you report of electrical transactions (with duplicate) for the year 1905.

Yours very respectfully,
CHAS. C. WISSEL,
Deputy Commissioner, Queens.

Department of Water Supply, Gas and Electricity,
Borough of Queens,
Long Island City, February 13, 1906.

Hon. CHARLES C. WISSEL, Deputy Commissioner, Queens, Long Island City, N. Y.:

Dear Sir—I herewith submit to you the report of the Electrical Bureau, Borough of Queens, for the year 1905, and a comparison sheet for 1904 and 1905, also a special report of the electrical railroad construction for the year. These reports will show the great increase in all classes of work in the Bureau.

The present force of this Bureau is entirely inadequate to take care of the work necessary to keep up to an acceptable standard.

The borough comprises 129 square miles, containing over 800 miles of pole lines and 215 miles of subway ducts. The rapid increase of buildings of all classes, requiring electrical supervision, promises to eclipse the increase of 1905, and this will clearly show the urgent need of an increase in the field and office force. There has been no increase in the force of the Bureau since 1901.

Yours very respectfully,
J. H. BURKE, Chief Inspector.

The following is a summary of the electrical transactions of the Department of Water Supply, Gas and Electricity, Borough of Queens, during the year 1905:

Permits Granted for Exterior Work.

Permits granted for telephone and signal	2,334
Permits granted for electric light and power	1,011
Total	3,345

Subway Constructed.

Low Tension—	
Feet of trench	33,063
Feet of duct	278,868
Feet of cable	99,510.4
Miles of conductors	4,028.39
High Tension—	
Feet of trench	15,908
Feet of duct	268,590
Feet of cable	38,965
Miles of conductors	16.27

Applications Received and Certificates Granted for Interior Work.

Applications received	1,257
Certificates granted	1,050
Incandescent lights	39,724
Arc lights	161
Mains	8
Motors (12,407.56 horse power)	152
Generators (9,626.6 kilowatts)	23
Heaters	11
Inspections	24,925

Complaints.

Complaints issued	494
Complaints attended to	493

Poles and Wires Removed.

Poles	64
Wires (miles)	40.96

Permits Granted for Exterior Work, Year 1905.

Company.	Quarters. First.	Second.	Third.	Fourth.	Total.
New York and New Jersey Telephone Company	256	694	459	813	2,222
New York and Queens Electric Light and Power Company	100	179	255	345	879
New York and Queens County Railway Company	4	..	17	4	25
Queens Borough Gas and Electric Company	3	14	14	1	32
Department of Education	3	..	..	..	3
Ocean Electric Railway Company	1	1	..	..	2
Western Union Telegraph Company	1	2	..	5	8
Manhattan Fire Alarm Company	3	..	..	..	3
Consolidated Fire Alarm Company	2	..	..	1	3
Long Island Electric Railway Company	2	1	..	2	5
Fire Department	..	3	..	..	3
Brooklyn Heights Railroad Company	..	5	3	1	9
Long Island Railroad Company	..	1	..	5	6
Jamaica Water Supply Company	..	..	2	..	2
Bowery Bay Electric Light and Power Company	..	..	9	..	9
Postal Telegraph Cable Company	..	..	..	1	1
Total	375	900	759	1,178	3,212
Subways—					
New York and New Jersey Telephone Company	..	5	5	13	23
Long Island Railroad Company	..	..	..	1	1
Subsidiaries—					
New York and Queens Electric Light and Power Company	2	3	3	8	16
New York and New Jersey Telephone Company	..	21	7	10	38
Queens Borough Gas and Electric Company	..	2	..	..	2
Conductors—					
Queens Borough Gas and Electric Company	..	1	..	..	1
New York and New Jersey Telephone Company	..	23	1	4	28
Long Island Railroad Company	..	..	..	6	6
New York and Queens Electric Light and Power Company	2	1	6	9	18
Total	379	956	781	1,229	3,345

For What Purpose.

	Quarters. First.	Second.	Third.	Fourth.	Total.
Erect poles	6	19	9	9	43
Erect poles and wires	19	49	49	97	214
Erect poles, wires and City lamps	16	24	17	12	69
Erect guy stubs	4	2	2	3	11
Replace poles and wires	19	41	57	55	172
Replace poles, wires and City lamps	3	2	8	..	13
Transfer poles and wires	..	5	1	..	6
Transfer poles, wires and City lamps	..	2	..	..	2
Reset poles	9	14	41	21	85
Remove poles and wires	1	10	2	5	18
String wires	297	728	557	965	2,547
String wires and hang lamps	1	4	16	11	32
Total	375	900	759	1,178	3,212
Subway	..	5	5	14	24
Subsidiaries	2	26	10	18	56
Conductors	2	25	7	19	53
Total	379	956	781	1,229	3,345

Permits granted for telephone and signal	2,334
Permits granted for electric light and power	1,011
	3,345

Report of Subways Constructed.

Low Tension Subway—	
Feet of trench	33,063
Feet of duct	278,868
Feet of cable	99,510.4
Miles of conductors	4,028.39
High Tension Subway—	
Feet of trench	15,908
Feet of duct	268,590
Feet of cable	38,965
Miles of conductors	16.27

Report of Complaints Sent to Various Companies and Contractors.

Complaints Issued—	
First quarter	104
Second quarter	105
Third quarter	163
Fourth quarter	122
Total	494
Complaints Attended to—	
First quarter	117
Second quarter	104
Third quarter	132
Fourth quarter	140
Total	493
Complaints not attended to	365

Interior Work.

	Applications Received.	Certificates Granted.	Incandescent Lights.	Arc Lights.	Mains.	Motors. Horse Power.	Generators, Kilowatts.	Heaters.
First quarter	219	157	8,561	12	..	18— 164.16	3— 22.5	..
Second quarter	344	283	7,954	37	3	29— 197.62	4— 82.5	..
Third quarter	260	240	9,476	23	..	51— 237.41	2— 175.0	11
Fourth quarter	434	370	13,733	89	5	54—11,808.37	14—9,346.6	..
Total	1,257	1,050	39,724	161	8	152—12,407.56	23—9,626.6	11

Total number of applications left over for work not completed, 536.

Inspections, Interior and Exterior.

First quarter	5,737
Second quarter	6,823
Third quarter	5,892
Fourth quarter	6,473
Total	24,925

Report of Poles and Wires Removed by the Different Companies Operating in the Borough of Queens During the Year 1905.

	Poles.	Miles, Wires.
New York and New Jersey Telephone Company	29	30.86
New York and Queens Electric Light and Power Company	35	10.10
Queens Borough Gas and Electric Company	....	....
New York and Queens County Railway Company	....	....
Knickerbocker Telephone and Telegraph Company	....	....
Western Union Telegraph Company	....	....
Postal Telegraph-Cable Company	....	....
Jamaica Water Supply Company	....	....
Police Department	....	....
Fire Department	....	....
New York Telephone Company	....	....
Seaside Light, Heat and Power Company	....	....
Bowery Bay Electric Light and Power Company	....	....
North Beach Electric Light and Power Company	....	....
New York and North Shore Railway Company	....	....
Brooklyn Heights Railroad Company	....	....
Ocean Electric Railway Company	....	....
New York and Rockaway Beach Railway Company	....	....
DeKalb Avenue and North Beach Railroad Company	....	....
Coney Island and Brooklyn Railroad Company	....	....
United States Life Saving Service	....	....
New York and Long Island Traction Company	....	....
New York and Long Island Electric Railway Company	....	....
New York and Long Island Telephone and Telegraph Company	....	....
Long Island Railroad Company	....	....
Total	64	40.96

General Summary of Work, 1905, Showing Increase Over Previous Year.

	1904.	1905.	Increase.	Decrease.
Interior.				
Applications	1,102	1,257	155	....
Certificates	953	1,050	97	....
Incandescent lights	36,886	39,724	2,838	....
Motors	129	152	23	
Horse power	673.6	12,497.5	11,793.96	....
Generators	10	23	13	
Kilowatts	388.07	9,626.6	9,238.53	....
Complaints.				
Complaints issued	570	494	.....	76
Complaints attended to	577	493	.....	84
Inspections	23,590	24,925	1,335	....
Exterior.				
Permits granted	1,834	3,345	1,511	....
Subways.				
Low Tension—				
Feet of trench	3,664	33,063	29,399	....
Feet of duct	13,055	278,868	265,813	....
Feet of cable	7,452	99,510.4	92,058.4	....
Miles of conductors	496.49	4,028.39	3,531.9	....
High Tension—				
Feet of trench	2,253	15,908	13,655	....
Feet of duct	36,048	268,590	232,542	....
Feet of cable	9,012	38,965	29,953	....
Miles of conductors	5.7	16.27	10.57	....

Total Underground Construction, from January 1, 1898, to January 1, 1906.

	Feet of Trench.	Feet of Duct.	Feet of Cable.	Miles of Conductors.
Low tension	141,557	835,902	226,859.4	11,377.36
High tension	18,161	303,638	47,917	27.84
Total	159,718	1,139,540	274,776.4	11,405.20

Prior to 1898, there had been no subway construction in this borough.

Poles and Wires Removed.

	1904.	1905.	Decrease.
Poles	151	64	87
Wires, miles	112.8	40.96	71.84

Electrical Railroad Construction for 1905.

Subway, miles	50.9
Cable, miles	22.14
Steel poles	377
Wooden poles	753
Overhead wires, miles	182
Third rail, miles	78
Cars (electrically equipped)	183
Power houses (1), horse power	23,000
Sub-stations (3), horse power	14,075
Sub-stations, portable (2), horse power	2,680
Lightning arrester houses (3)	....

VI.

Department of Water Supply, Gas and Electricity,
Borough of Richmond, Office, Richmond Building,
New Brighton, January 8, 1906.

Hon. WILLIAM B. ELLISON, Commissioner Water Supply, Gas and Electricity, No. 21 Park Row, New York City:

Dear Sir—I forward herewith the annual report of the Department Water Supply, Gas and Electricity, Borough of Richmond, for the year ending December 31, 1905.

Yours very respectfully,
EDWARD I. MILLER, Deputy Commissioner.

New Brighton, January 2, 1906.

Hon. WILLIAM B. ELLISON, Commissioner Water Supply, Gas and Electricity, No. 21 Park Row, City of New York:

Dear Sir—I herewith respectfully submit a yearly report of the operations of the Division of Water Supply, Gas and Electricity, located in the Borough of Richmond, for the year ending December 31, 1905.

Respectfully,
EDWARD I. MILLER, Deputy Commissioner.

Appropriation, Salaries of Deputy Commissioner.

Amount of appropriation for the year 1905	$6,900 00
Amount of vouchers certified to Comptroller to date	6,624 03
Balance, December 30, 1905	$275 97

Pumping Stations, Salaries and Supplies.

Appropriation for year 1905		$7,100 00
Transferred from appropriation, Salaries, Lighting and Electricity, Borough of Richmond	$1,250 00	
Transferred from appropriation, Rental of Fire Hydrants, Borough of Richmond	1,000 00	
Transferred from various other appropriations	3,750 00	
		6,000 00
Total appropriation for year 1905		$13,100 00
Total amount of vouchers certified to Comptroller to date	$10,788 99	
Outstanding Liabilities—		
Balance of coal contract	892 50	
David C. Butler	15 04	
Jacques Mersch	5 70	
William Snedeker	11 18	
Hammond Van Vechten	30 10	
Francis N. Miller	26 90	
New York and New Jersey Telephone Company (estimated)	50 00	
Disinfecting outhouse at Tottenville	25 00	
One atlas	30 00	
Frederick A. Verdon	26 68	
James A. Smith	41 50	
James Collins	7 25	
Morey & La Rue Laundry Company	3 25	
Police Department	6 00	
		11,960 09
Estimated balance		$1,139 91

Trial Balance of Rental of Fire Hydrants as Per Ledger.

Amount of appropriation for the year 1905	$30,052 50
Transferred to appropriation of pumping station, Salaries and Supplies	1,000 00
Total of appropriation	$29,052 50
Vouchers certified to Comptroller to date	14,444 96
	$14,607 54

Outstanding Orders—

Staten Island Water Supply Company	$7,598 47	
Crystal Water Company	6,762 50	
South Shore Company	180 00	
		14,540 97
Amount of appropriation		$66 57

Water Fund, Borough of Richmond.

Amount of Water Fund, Borough of Richmond	$78,035 11
Vouchers certified to Comptroller to date	73,198 34
Balance, December 30, 1905	$4,836 77
Outstanding orders	2,371 00
	$2,465 77

Statement of Water Rents and Charges Collected and Deposited for the Year Ending December 31, 1905.

Annual frontage and extra rate	$414 44
Penalties on deferred bills and annual rates	5 17
Meter rates for water supplied in buildings	5,059 44
Charges for water supplied for building purposes	120 07
Cash deposit on building purposes	.....
Meter rates for water supplied in shipping	.....
Charges for water to shipping not metered	.....
Charges for water for street sprinkling	.....
Charges for water for miscellaneous purposes	.....
Charges for water mains	.....
	$5,599 12
Cash paid over to City Chamberlain	$5,599 12

Number of taps placed on service in this borough on mains belonging to The City of New York, for the year ending December 31, 1905, ninety (90).

Statement of Service of Well and Force Pumps, Coal Consumption, etc., for the Quarter Ending December 31, 1905.

Amount of coal used, gross tons	583.145
Amount of cylinder oil used, gallons	118.8125
Amount of machine oil used, gallons	65.4375
Amount of packing used, pounds	51
Amount of waste used, pounds	223

Well Pumps.

	Hours.
6-inch well No. 1	....
8-inch well No. 2	418¼
10-inch well No. 3	1,536¼
10-inch well No. 4	....
10-inch well No. 5	3,485½
10-inch well No. 6	4,113½
10-inch well No. 7	1,334
10-inch well No. 8	4,056½
Total	14,944

Worthington Force Pumps.

	Hours.
No. 1	3,746½
No. 2	2,303
Total	6,049½

Number of gallons drawn from wells and pumped to standpipe, from January 1, 1905 to December 31, 1905:

	Gallons.
No. 1	47,819,065.47
No. 2	29,059,773.99
Total	76,878,839.46

Hours of Service.

Engineer, pumping station	7,984
Stoker, pumping station	3,284
Laborers	5,889

Expenditures.

Salaries of Enginemen	$2,400 27
Salaries of Stokers	1,090 88
Wages of Laborers	1,472 25
Coal	3,367 38
Waste	15 61
Packing	11 22
Oil	136 32
Total	$8,493 93
Cost of production, per M. gallons	$0 11
Average daily consumption, gallons	210,630

Extra.

Laborers employed at pumping station, hours	2,871

Contract Statement, Including Contracts in Progress, Contracts Made, Contracts Completed.

Title of Works or Supplies.	Name of Contractor.	Date of Contract.	Date of Expiration of Contract Time.	Estimated Cost.
For furnishing, delivering and storing 600 gross tons (2,240 pounds to a ton), of No. 1 egg size white ash anthracite coal, at the pumping station, Tottenville	George W. DuBois	Jan. 29, 1905	Jan. 24, 1905	$3,570 00

Department of Water Supply, Gas and Electricity, Borough of Richmond
New Brighton, N. Y., January 6, 1906.

Hon. WILLIAM B. ELLISON, Commissioner Water Supply, Gas and Electricity, No. 21 Park Row, New York City:

Dear Sir—I herewith submit the following report of the transactions of the Bureau of Gas and Electricity, Department of Water Supply, Gas and Electricity, Borough of Richmond, for the year ending December 31, 1905.

Very respectfully,
EDWARD I. MILLER, Deputy Commissioner.

The following is a list of orders drawn during year ending December 31, 1905:

Lamps and Lighting.

In Favor of—	Estimated Amount.
W. W. Cornell, use of conveyance	$180 00
Daniel A. Vanpelt, oil lighting	250 00
W. W. Cornell, use of conveyance	180 00
Mary A. Vanpelt, oil lighting	350 00
Mary A. Vanpelt, oil lighting	300 00
W. W. Cornell, use of conveyance	180 00
Mary A. Vanpelt, oil lighting	300 00
W. W. Cornell, use of conveyance	180 00
Total	$1,920 00

Supplies and Contingencies.

In Favor of—	Estimated Amount.
R. P. Brown, Postmaster, postage stamps	$50 00
Fred. Macey Company, Ltd., card file cabinets	45 00
The Morey and La Rue Laundry Company, toilet supplies	13 00
James Collins, carting and expressage	50 00
James A. Smith, installing and repairing hydrants	85 00
Manhattan Electrical Supply Company, electrical supplies	30 00
Adam J. Scott, grass seed, etc	15 00
James A. Smith, repairing drinking fountain	30 00
R. P. Brown, Postmaster, postage stamps	50 00
Staten Island Rapid Transit Railroad Company, railroad tickets	72 00
New York Stencil Works, rubber stamps	5 00
James A. Smith, installing and repairing fountain	30 00
James A. Smith, repairing hydrant	20 00
R. P. Brown, Postmaster, postage stamps	30 00
Adam J. Scott, flowers, planting, etc	15 00
Total	$540 00

STATEMENT OF VOUCHERS.

Lamps and Lighting.

Appropriation for year 1904		$152,900 00
Total amount of vouchers drawn to December 31, 1904	$150,939 84	
Vouchers drawn against account during year ending December 31, 1905—		
In Favor of:		
W. W. Cornell	180 00	
New York and Richmond Gas Company	162 16	
New York and Richmond Gas Company	60 17	
Richmond Light and Railroad Company	13,840 46	
Daniel A. Vanpelt	300 00	
Total		165,482 63
Estimated deficiency		$12,582 63

Supplies and Contingencies.

Appropriation for year 1904		$1,250 00
Total amount of vouchers drawn to December 31, 1904	$1,182 09	
Vouchers drawn against account during year ending December 31, 1905—		
In Favor of:		
Hammond Van Vechten	9 90	
John A. Driscoll	16 70	
James Collins	5 25	
New York and New Jersey Telephone Company	114 50	
F. N. Miller	10 40	
Morey & La Rue Laundry Company	3 25	
M. S. O'Connell	40 00	
Total		1,382 09
Estimated deficiency		$132 09

Salaries—Lighting and Electricity.

Appropriation for year 1905		$5,649 50
Total amount of vouchers drawn against account to September 30, 1905	$2,860 02	
Transfer of appropriation, Salaries—Lighting and Electricity, to appropriation Pumping Stations—Salaries and Supplies, Borough of Richmond, July 14, 1905	1,250 00	
Vouchers drawn against account quarter ending December 31, 1905—		
Charged to:		
Salaries, month of October	265 20	
Salaries, month of November	265 20	
Salaries, month of December	308 33	
Transfer of appropriation Salaries—Lighting and Electricity to appropriation Pumping Stations—Salaries and Supplies, Borough of Richmond, November 24, 1905	700 00	
Total		5,648 75
Estimated balance		$0 75

Lamps and Lighting.

Appropriation for year 1905		$157,900 00
Total amount of vouchers drawn against account to September 30, 1905	$82,739 62	
Vouchers drawn against account quarter ending December 31, 1905—		
In Favor of:		
Mary A. Vanpelt	300 00	
W. W. Cornell	180 00	
New York and Richmond Gas Company	43 70	
New York and Richmond Gas Company	29 21	
Richmond Light and Railroad Company	12,631 10	
Richmond Light and Railroad Company	12,675 54	
Richmond Light and Railroad Company	12,124 85	
New York and Richmond Gas Company	96 96	
New York and Richmond Gas Company	56 01	
New York and Richmond Gas Company	45 33	
Richmond Light and Railroad Company	12,883 75	
New York and Richmond Gas Company	14 73	
New York and Richmond Gas Company	65 10	
New York and Richmond Gas Company	179 86	
Outstanding Liabilities—		
Richmond Light and Railroad Company (estimated)	25,350 00	
New York and Richmond Gas Company (estimated)	350 00	
W. W. Cornell	180 00	
Mary A. Vanpelt	300 00	
Total		$160,245 76
Estimated deficiency		$2,345 76

Supplies and Contingencies.

Appropriation for year 1905		$1,000 00
Total amount of vouchers drawn against account of September 30, 1905	$936 17	
Vouchers drawn against account quarter ending December 31, 1905—		
In Favor of:		
Hammond Van Vechten	31 75	
John A. Driscoll	13 35	
R. P. Brown, Postmaster	30 00	
Morey & La Rue Laundry Company	3 25	
Total		1,014 52
Estimated deficiency		$14 52

PERMITS ISSUED DURING YEAR ENDING DECEMBER 31, 1905.

Exterior Wiring.

Company.	Quarters. First.	Second.	Third.	Fourth.	Total.
New York and New Jersey Telephone Company	200	241	326	124	891
Richmond Light and Railroad Company	61	138	110	103	412
American Telegraph and Telephone Company	4	4	3	4	15
Staten Island Midland Railroad Company	3	3	3	3	12
Western Union Telegraph Company	6	4	..	1	11
Staten Island Rapid Transit Railroad Company	..	1	..	..	1
New York Telephone Company	..	..	1	..	1
New York Fire Department	..	..	2	..	2

Laying of Gas Mains, Service Pipes and Repairs.

Company.	Quarters. First.	Second.	Third.	Fourth.	Total.
New York and Richmond Gas Company	11	161	92	36	300

	Quarters. First.	Second.	Third.	Fourth.	Total.
Applications received for interior wiring	53	65	66	114	298
Certificates issued for interior wiring	53	65	70	114	302

Inspections.

	Quarters. First.	Second.	Third.	Fourth.	Total.
Exterior wiring	459	836	615	319	2,229
Interior wiring	70	145	140	167	522
Laying gas, etc	16	348	87	59	510

Motors Installed.

First Quarter—One 2-horse power, two 3-horse power, one 5-horse power, two 7½-horse power, one 10-horse power, one 12-horse power.

Second Quarter—Two ⅛-horse power, two ¼-horse power, three ½-horse power, four 5-horse power, two 10-horse power, one 20-horse power, one 50-horse power.

Third Quarter—Eight ⅛-horse power, one 2-horse power, one 5-horse power, one 7½-horse power, one 10-horse power.

Fourth Quarter—Five ⅛-horse power, one ½-horse power.

Lamps Burning at End of Year 1905.

(Public Lighting.)

Arc electric	590
Incandescent electric	3,603
Oil lamps	100

New Brighton, January 2, 1906.

Hon. WILLIAM B. ELLISON, Commissioner Water Supply, Gas and Electricity, No. 21 Park Row, New York City:

Dear Sir—I herewith respectfully submit, as required by section 1546 of the charter of Greater New York, a report of the transactions of the division of the Department of Water Supply, Gas and Electricity, which has charge of the water supply in this borough, for the quarter ending December 31, 1905.

Respectfully,
EDWARD I. MILLER,
Deputy Commissioner, Borough of Richmond.

Trial Balance and Statement of Appropriation of Salaries of Deputy Commissioner as Per Ledger.

Amount of appropriation for the year 1905	$6,900 00
Amount of vouchers certified to Comptroller to date	6,624 03
Balance of appropriation December 31, 1905	$275 97

Pumping Stations—Salaries and Supplies.

Appropriation for year 1905		$7,100 00
Transferred from appropriation Salaries, Lighting and Electricity, Borough of Richmond	$1,250 00	
Transferred from appropriation Rental of Fire Hydrants, Borough of Richmond	1,000 00	
Transferred from various other appropriations	3,750 00	
		6,000 00
Total appropriation for year 1905		$13,100 00
Total amount of vouchers certified to Comptroller to date	$10,788 99	
Outstanding Liabilities—		
Balance of coal contract	892 50	
David C. Butler	15 04	
Jacques Mersch	5 70	
William Snedeker	11 18	
Hammond Van Vechten	30 10	
Francis N. Miller	26 90	
New York and New Jersey Telephone Company (estimated)	50 00	
Disinfecting Out-house at Tottenville	25 00	
One atlas	30 00	
Frederick A. Verdon	26 68	
James A. Smith	41 50	
James Collins	7 25	
Morey & La Rue Laundry Company	3 25	
Police Department	6 00	
		11,960 09
Estimated balance		$1,139 91

Trial Balance of Rental of Fire Hydrants as Per Ledger.

Amount of appropriation for the year 1905		$30,052 50
Transferred to appropriation of pumping station, salaries and supplies		1,000 00
Total of appropriation		$29,052 50
Vouchers certified to Comptroller to date		14,444 96
		$14,607 54
Outstanding Orders—		
Staten Island Water Supply Company	$7,598 47	
Crystal Water Company	6,762 50	
South Shore Company	180 00	
		14,540 97
Amount of appropriation		$66 57

Trial Balance of Water Fund, Borough of Richmond, as Per Ledger.

Amount of Water Fund, Borough of Richmond	$78,035 11
Vouchers certified to Comptroller to date	75,198 34
Balance December 31, 1905	$4,836 77
Outstanding orders	2,371 00
	$2,465 77

Statement of Water Rents and Charges Collected and Deposited for the Quarter Ending December 31, 1905.

Annual frontage rate and extra charge	$76 47
Penalties on deferred bills and annual rates	4 62
Meter rates for water supplied in buildings	2,139 46
Charges for water supplied for building purposes	82 80
Cash deposit on building purposes	.....
Meter rates for water supplied in shipping	.....
Charges for water to shipping not metered	.....
Charges for water for street sprinkling	.....
Charges for water for miscellaneous purposes	.....
Charges for permits to tap water main	.....
Cash paid over to City Chamberlain	$2,303 35

Number of taps placed on service in this borough on mains belonging to The City of New York for the quarter ending December 31, 1905, twenty-four (24).

Statement of Service of Well and Force Pumps, Coal Consumption, etc., for the Quarter Ending December 31, 1905.

Amount of coal used, gross tons	141.161
Amount of machine oil used, gallons	20.6875
Amount of cylinder oil used, gallons	26.8125
Amount of packing used, pounds	8
Amount of waste used, pounds	78

Well Pumps.

	Hours.
6-inch well No. 1	.....
8-inch well No. 2	.....
10-inch well No. 3	.....
10-inch well No. 4	.....
10-inch well No. 5	396
10-inch well No. 6	1,415
10-inch well No. 7	.....
10-inch well No. 8	1,255
Total	3,066

Worthington Force Pumps.

	Hours.
No. 1	918½
No. 2	615
Total	1,533½

Number of gallons drawn from wells and pumped to stand-pipe, from October 1, 1905, to December 31, 1905.

No. 1	10,987,440.87
No. 2	7,612,006.32
Total	18,599,447 19

Hours of Service.

	Hours.
Enginemen Pumping Station	1,472
Stoker Pumping Station	736
Laborers	1,533

Expenditures.

Salaries of Enginemen	$638 70
Salary of Stoker	230 00
Wages of Laborers	383 25
Coal	839 90
Waste	5 46
Packing	1 76
Oil	34 42
Total	$2,133 49
Cost of production per M. gallons	$0.1147
Average daily consumption, gallons	202,170

Extra.

Laborers employed at pumping station, hours	604

Statement of Lengths of Water Mains in Use December 31, 1905, Lengths Added During the Quarter Ending December 31, 1905, with Number of Stopcocks and Hydrants.

Size of Mains in Use December 31, 1905.

		Additions.
12 inches	17,080	none.
8 inches	8,182.75	none.
6 inches	38,049.85	none.
4 inches	8,211.90	none.
Total	70,424.50	none.

Stopcocks in Use December 31, 1905.

		Additions.
12 inches	16	none.
8 inches	18	none.
6 inches	99	none.
4 inches	15	none.
Total	148	none.

Hydrants.

Staten Island Water Supply Company	610
Crystal Water Supply Company	453
South Shore Water Works Company	18
Tottenville Pumping Station	133
Total	1,214

Contract Statement, Including Contracts in Progress, Contracts Made, Contracts Completed.

Title of Works or Supplies.	Name of Contractor.	Date of Contract.	Date of Expiration of Contract Time.	Estimated Cost.
For furnishing, delivering and storing 600 gross tons (2,240 pounds to a ton), of No. 1 egg size white ash anthracite coal, at the pumping station, Tottenville	George W. DuBois	Jan. 29, 1905	Jan. 24, 1905	$3,570 00

VII.

Department of Water Supply, Gas and Electricity,
Bureau of Water Register, Borough of Manhattan,
New York, January 6, 1906.

Hon. WM. B. ELLISON, Commissioner of Water Supply, Gas and Electricity:

Dear Sir—I have the honor to submit herewith a detailed statement of the receipts of this Bureau for the year ending December 31, 1905, and respectfully beg to call your attention to the following facts:

The receipts for the year are $5,354,755.22, being the largest in the history of the Department. They constitute a net increase in all branches of this Bureau and an increase of $137,652.10 over the receipts of the year 1904.

In the Regular Rate Branch there is an increase of $63,528.45, which is unquestionably due to the sending out by this Bureau of thousands of postal cards reminding consumers that the law enforces a penalty on August 1 and November 1 on all unpaid Regular Rate bills.

In the Meter Branch there is an increase of $40,178.87 in receipts, which has been made without the sending out of a single shut off notice for non-payment of bills, and notwithstanding the fact that a large number of buildings have been demolished for railroad stations, parks, bridge approaches and other public improvements.

The receipts for building purposes and taps show an increase of $18,981.25, and from shipping permits, $4,015.

During the year there were 2,185 new meters set, almost twice as many as were installed in 1904.

Particular attention has been given to the subject of waste, and all complaints relating to waste of water have been promptly investigated and the waste checked as soon as possible. In some instances where consumers have ignored repeated notices from the Department to stop waste on their premises, meters have been installed.

The records of the Bureau have been rebound, and the record room on the sixteenth floor has given general satisfaction.

Respectfully,
J. W. SAVAGE, Water Registrar.

Department of Water Supply, Gas and Electricity,
Bureau of Water Register, Borough of Manhattan,
New York, January 4, 1906.

Hon. WM. B. ELLISON, Commissioner of Water Supply, Gas and Electricity:

Dear Sir—I have the honor to submit a statement of moneys received in this Bureau for the year ending December 31, 1905, and placed to the credit of the respective accounts with the City Chamberlain, together with the amounts returned to the Bureau of Arrears:

Regular Rates.

	Penalties.	Principal.	Totals.
Quarter ending March 31	$2,935 20	$25,183 25	$28,118 45
Quarter ending June 30	3,284 44	772,857 05	776,141 49
Quarter ending September 30	5,122 37	1,130,851 50	1,135,973 87
Quarter ending December 31	7,506 44	120,083 15	127,589 59
	$18,848 45	$2,048,974 95	$2,067,823 40

Meter Measurement—			
Meters, Exclusive of Steamboat Meters:			
Quarter ending March 31		$531,711 36	
Quarter ending June 30		804,348 88	
Quarter ending September 30		726,480 91	
Quarter ending December 31		938,375 18	
			$3,000,916 33
Steamboat Meters:			
Quarter ending March 31		$39,745 00	
Quarter ending June 30		35,634 97	
Quarter ending September 30		17,208 40	
Quarter ending December 31		65,228 40	
			157,816 77
Building Purposes—			
Permits issued, 1,216.			
Quarter ending March 31		$8,272 09	
Quarter ending June 30		18,153 54	
Quarter ending September 30		18,486 90	
Quarter ending December 31		17,089 90	
			62,002 43
Extra Boilers, Etc.—			
Permits issued, 172.			
Quarter ending March 31		$595 28	
Quarter ending June 30		1,261 98	
Quarter ending September 30		1,112 03	
Quarter ending December 31		530 83	
			3,500 12

Tugs—		
Permits issued, 1,040.		
Quarter ending March 31	$4,626 25	
Quarter ending June 30	7,395 00	
Quarter ending September 30	5,475 00	
Quarter ending December 31	6,751 25	
		24,247 50
Taps—		
Taps issued, 2,359.		
Quarter ending March 31	$1,455 00	
Quarter ending June 30	2,828 00	
Quarter ending September 30	2,365 50	
Quarter ending December 31	2,714 00	
		9,362 50
Meter Setting Fund No. 2—		
Quarter ending March 31	$1,043 45	
Quarter ending June 30	1,256 40	
Quarter ending September 30	4,540 96	
Quarter ending December 31	5,112 93	
		11,953 74
Repairs, Etc. (Bureau Chief Engineer)—		
Quarter ending March 31	$997 41	
Quarter ending June 30	2,012 57	
Quarter ending September 30	1,588 30	
Quarter ending December 31	1,559 83	
		6,158 11
Street Sprinkling—		
Quarter ending March 31	.....	
Quarter ending June 30	3,110 92	
Quarter ending September 30	5,333 00	
Quarter ending December 31	2,666 50	
		11 110 42
Total		$5,354,891 32
Less payment stopped on check in June	$41 80	
Less payment stopped on check in August	62 80	
Less payment stopped on check in September	31 50	
		136 10
		$5,354,755 22
Returned to Bureau of Arrears—		
Regular rates	$92,427 80	
Meter Measurement	234,470 92	
Meter Setting Fund No. 2	2,962 94	
The total amount collected during the year 1904 was		5,217,103 12
Which shows an increase of		$137,652 10

Respectfully,
J. W. SAVAGE, Water Register.

VIII.

Department of Water Supply, Gas and Electricity,
Bureau of Lamps and Gas, Nos. 13 to 21 Park Row,
November 12, 1906.

Hon. FRANK J. GOODWIN, Deputy Commissioner:

Dear Sir—Referring to the question of the annual report for the year 1905 of the Bureau of Lamps and Lighting in the various boroughs, I would beg leave to state the following:

On March 14, 1906, I was ordered by the Commissioner to take charge of all boroughs, and on looking over the forms of the annual reports during the preceding year under the extraordinary conditions which prevailed in the lighting sections of this department, I found that the reports for the Boroughs of Brooklyn, Queens and Richmond did not give the correct information for the year, and in consequence I did not wish to continue the old form.

As a matter of fact, up to the present date the rates showing the cost of lighting are not fixed, and in many cases up to date no bills have yet been rendered by the companies for that year. The department advertised for bids and opened same on March 16, 1905, and these bids were all rejected immediately by order of the Mayor. On July 1, 1905, as you know, the Legislative rates went into effect.

All of this produced a great confusion, and the companies in general met the situation by not sending in any bills whatever. This department, however, managed to keep track of materials used by quantities and by numbers, so that, figuring at the legal rates, it could give an assumption as to perhaps what the cost would be. Such assumptions, however, as they were made during the year have been modified and changed by compromises between the companies and the City, two of which are even now before the Comptroller for final settlement and approval.

It has been only within the last two or three months that the missing bills have been received by the department, except so far as the supply of gas is concerned. It was impossible, therefore, for us to prepare an annual report for the year 1905 at any earlier date than now, and even at this time the results will not be absolute, nor can anyone give you the absolute results. Many of these will be determined by the court in cases brought by the companies to recover the amount of their bills.

In addition to this, on account of the work of taking up the outside boroughs and of answering the many calls made upon this bureau by other departments during the year for collaboration in getting up defenses for the City against the various suits, it has been impossible for the Chief Engineer, with the force at his command, to obtain the necessary time in which to write this report.

Owing to a lack of system in outside boroughs during the past year or two the returns from same have to be entirely revised and rejected, and the mass of calculations and corrections necessary to make is very great, on account of the companies sending excessive bills in some cases, and in other cases not sending any bills at all.

The relighting of the outside boroughs had to be taken up, as the demand for additional lighting, owing to the neglect of previous years, had become imperative. The Chief Engineer of this department had not only to do the technical work in this regard, but had also to get the money to do it with. This, however, at this time, is practically completed, although there remain mainy minor details to be corrected in the future.

Without wishing to complain, and merely to show you that the bureau has had to work under emergency conditions during the last year, I would say that in addition to many of the employees of this bureau having to work overtime and shorten vacations, and so on, many of them have done night work as well as day work. As for myself, as I am primarily responsible for not furnishing this report, I would state that I have had no vacation this year, or, in fact, for three years, and this year have worked, and am still working, Saturday afternoons, Sundays and every evening at home. There is every prospect now, however, that I can take up the question of the annual report, and I trust to have same about the first of the year.

As I have suggested in a previous letter, I would be glad if you will forward this to the Commissioner and the Mayor, so that they will understand the reasons for the apparent delay of the annual report of this bureau. I am

Respectfully,
C. F. LACOMBE,
Chief Engineer of Light and Power.

PROCEEDINGS OF THE BOARD OF RAPID TRANSIT RAILROAD COMMISSIONERS

AT A MEETING OF THE BOARD HELD IN NO. 320 BROADWAY ON THURSDAY, THE 13TH OF DECEMBER, 1906,

There were present—Alexander E. Orr, President, presiding; John H. Starin, Vice-President; Mayor George B. McClellan; Deputy Comptroller John H. McCooey, representing the Comptroller, and Commissioners Woodbury Langdon, Charles Stewart Smith, Morris K. Jesup and Lewis Cass Ledyard.

George L. Rives and Albert B. Boardman, Counsel; George S. Rice, Chief Engineer, and Alfred Craven, Deputy Chief Engineer, also were present.

The minutes of the meeting of December 6 were read and it was moved that they be approved.

Ayes—The President, Vice-President, Mayor, Comptroller and Commissioners Langdon, Smith, Jesup and Ledyard.

Nays—None.

Carried.

Communication of the Board of Estimate and Apportionment was presented as follows and referred to the Committee on Plans and Contracts:

BOARD OF ESTIMATE AND APPORTIONMENT,
OFFICE OF THE SECRETARY, ROOM 805, NO. 277 BROADWAY,
December 8, 1906.

Hon. ALEXANDER E. ORR, *President, Board of Rapid Transit Railroad Commissioners:*

SIR—I transmit herewith certified copy of a resolution duly adopted by the Board of Estimate and Apportionment at its meeting of December 7, 1906, relative to the construction of certain rapid transit routes heretofore adopted by your Board.

Respectfully,
(Signed) JOSEPH HAAG, Secretary.

Whereas, This Board is in receipt of two communications dated October 11, 1906, and also a third communication dated December 1, 1906, from the Board of Rapid Transit Railroad Commissioners, in relation to contracts for future rapid transit railways, and requesting an expression of opinion from this Board in regard to the routes and to the manner in which such contracts shall be advertised; now therefore be it

Resolved, That the Board of Estimate and Apportionment hereby recommends to the Board of Rapid Transit Railroad Commissioners that alternate bids be invited.

First—For construction alone, and

Second—For construction, equipment and operation of the following routes, viz.:

1. Seventh and Eighth avenue.
2. Lexington avenue route.
3. Third avenue route.
4. Jerome avenue subway.
5. Fourth avenue and Bensonhurst route.
6. The so-called tri-borough route south of One Hundred and Thirty-eighth street, in the Borough of The Bronx, including in addition to the Third avenue route, Manhattan Bridge route, part of route 9-C in Brooklyn, part of route 11-E1 in Brooklyn, and route 11-A, 11-B and 11-F (Bensonhurst route) in the Borough of Brooklyn.
7. West Farms and White Plains route.

A true copy of resolution adopted by the Board of Estimate and Apportionment December 7, 1906.

(Signed) JOSEPH HAAG, Secretary.

Communication of the Board of Estimate and Apportionment, enclosing letter and resolutions of the Allied Boards of Trade and Taxpayers' Association, particularly concerning the Broadway, Brooklyn, route, was presented and the Secretary was instructed to notify the correspondent of the cause of the delay.

Letter of the President of the New York Central and Hudson River Railroad Company was read as follows:

NEW YORK CENTRAL AND HUDSON RIVER RAILROAD COMPANY,
GRAND CENTRAL STATION,
NEW YORK, December 10, 1906.

Mr. BION L. BURROWS, *Secretary, Board of Rapid Transit Railroad Commissioners,* No. 320 Broadway, New York City:

DEAR SIR—I have your favor of the 7th inst., referring to yours of November 16, 1906, transmitting a copy of report of the Chief Engineer of the Board of Rapid Transit Railroad Commissioners, together with plans prepared by him, under the provisions of chapter 109 of the Laws of 1906.

In reply I beg to say that this matter is being given very careful consideration by the officers of this company, and we expect that within a few days we shall be able to make an appropriate reply. Vice-President Wilgus, in charge of the plans, has given continuous study to the problem, and I beg to assure the Board that there will be no unnecessary delay.

The very comprehensive and able report of the Chief Engineer of the Board contains suggestions which merit and are receiving our careful consideration.

Yours very truly,
(Signed) W. H. NEWMAN, President.

Letter of the Hudson and Manhattan Railroad Company was read as follows, with report of the Chief Engineer:

HUDSON AND MANHATTAN RAILROAD COMPANY,
NO. 111 BROADWAY,
NEW YORK, December 11, 1906.

Honorable Board of Rapid Transit Railroad Commissioners for The City of New York, Hon. ALEXANDER E. ORR, *President,* No. 320 Broadway, New York City:

DEAR SIRS—I submit herewith the following plans, showing more in detail the general arrangement of our Church Street Terminal Station and the method of doing the work:

1. Hudson and Manhattan Railroad—Church Street Terminal—Plan at street level, dated November 14, 1906, No. 2398-A-C-6-1.
2. Hudson and Manhattan Railroad—Church Street Terminal—Plan at concourse level, dated November 14, 1906, No. 2398-a-c-4.
3. Hudson and Manhattan Railroad—Church Street Terminal—Plan at track level, dated November 14, 1906, No. 2398-AC-2.
4. Hudson and Manhattan Railroad—Church Street Terminal sections, dated November 14, 1906, No. 2398-AC-7.
5. Hudson and Manhattan Railroad—Church Street Terminal sections, dated November 14, 1906, No. 2398-AC7-1.
6. Hudson and Manhattan Railroad—Church Street Terminal—Method of building switch enlargement on Cortlandt and Fulton streets, dated November 14, 1906, No. 2571-A.
7. Hudson and Manhattan Railroad—Church Street Terminal—Method of building switch enlargement on Cortlandt and Fulton streets, dated November 14, 1906, No. 2571-B.
8. Hudson and Manhattan Railroad—Church Street Terminal—Plan and section of Dey Street Underground Passage, dated November 14, 1906, No. 2558.
9. Hudson and Manhattan Railroad—Plan and profile of New York approaches, dated November 14, 1906, No. 2303.
10. Hudson and Manhattan Railroad—Church Street Terminal—Sectional plan at track level, showing house vaults, dated November 14, 1906, No. 2398-A-O-1.

We respectfully request your approval of these plans.

Very truly yours,
(Signed) HUDSON AND MANHATTAN RAILROAD COMPANY,
By W. G. McADOO, President.

NEW YORK, December 13, 1906.

Hon. ALEXANDER E. ORR, *President, Rapid Transit Commission:*

DEAR SIR—The Hudson and Manhattan Railroad Company has resubmitted plans for its Church Street Terminal Station and approaches as follows:

Church Street Terminal—Plan at street level, No. 2398-A-C-6-1.
Church Street Terminal—Plan at concourse level, No. 2398-A-C-4.
Church Street Terminal—Plan at track level, No. 2398-A-C-2.
Church Street Terminal—Plan and section of Dey street underground passage, No. 2558.
Plan and profile of New York approaches, No. 2303.

All of the above plans are dated November 14, 1906. These are practically the same plans approved by the Board on March 22 of this year. The slight changes which have been made are not material. The plans only have been worked out a little more in detail.

The following additional plans have been submitted:

Church Street Terminal—Sections 2398-A-C-7
Church Street Terminal—Sections 2398-A-C-7-1.
Church Street Terminal—Method of building switch enlargement on Cortlandt and Fulton streets, No. 2571-A.
Church Street Terminal—Method of building switch enlargement on Cortlandt and Fulton streets, No. 2571-B.
Church Street Terminal—Sectional plan at track level, showing house vaults, No. 2398-A-O-1.

These latter plans are also dated November 14, 1906. They are additional plans amplifying the plans already submitted.

I have examined all of the above plans and do not see any reason why the Board should not approve the same.

Very truly yours,
(Signed) GEORGE S. RICE, Chief Engineer.

The following resolution was moved:

Resolved, That the plans showing in detail the general arrangement of the Church Street Terminal Station of the Hudson and Manhattan Railroad Company, hereafter mentioned and described, be and they hereby are approved by this Board.

1. Church Street Terminal—Plan at street level, dated November 14, 1906, No. 2398-A-C-6-1.
2. Church Street Terminal—Plan at concourse level, dated November 14, 1906, No. 2398-a-c-4.
3. Church Street Terminal—Plan at track level, dated November 14, 1906, No. 2398-AC-2.
4. Church Street Terminal sections, dated November 14, 1906, No. 2398-AC-7.
5. Church Street Terminal sections, dated November 14, 1906, No. 2398-AC7-1.
6. Church Street Terminal—Method of building switch enlargement on Cortlandt and Fulton streets, dated November 14, 1906, No. 2571-A.
7. Church Street Terminal—Method of building switch enlargement on Cortlandt and Fulton streets, dated November 14, 1906, No. 2571-B.
8. Church Street Terminal—Plan and section of Dey Street Underground Passage, dated November 14, 1906, No. 2558.
9. Plan and Profile of New York Approaches, dated November 14, 1906, No. 2303.
10. Church Street Terminal—Sectional plan at track level, showing house vaults, dated November 14, 1906, No. 2398-A-O-1.

Ayes—The President, Vice-President, Mayor, Comptroller and Commissioners Langdon, Smith, Jesup and Ledyard.
Nays—None.
Carried.

Letter of the Hudson and Manhattan Railroad Company was presented, as follows:

HUDSON AND MANHATTAN RAILROAD COMPANY,
No. 111 BROADWAY,
NEW YORK, December 13, 1906.

Board of Rapid Transit Railroad Commissioners, Hon. ALEXANDER E. ORR, *President,* No. 320 Broadway, New York City:

DEAR SIR—Annexed hereto we submit a schedule of the respective properties whose vaults will be affected by our tunnel construction, with their street numbers and the names of their owners of record.

We respectfully request you to direct your Chief Engineer to notify the said licensees of the termination of their vault privileges, as it will be necessary for us to remove the said vaults during our construction work. We submit forms for approval and adoption by your Board.

Yours respectfully,
(Signed) HUDSON AND MANHATTAN RAILROAD COMPANY,
By W. G. McADOO, President.

The following resolution was moved:

Resolved, That the Chief Engineer of this Board be and he is hereby directed to notify all owners of property abutting on Cortlandt and Fulton sreets, between Church and Greenwich streets, who are maintaining vaults under the surface of the street in front of their property, that such vaults as are constructed under the roadway or under the sidewalk will be required for the purpose of the construction of the tunnel of the Hudson and Manhattan Railroad Company, and notifying such owners to remove their property from the portion of the vaults so to be used on or before a date to be fixed in such notice.

Ayes—The President, Vice-President, Mayor, Comptroller, and Commissioners Langdon, Smith, Jesup and Ledyard.
Nays—None.
Carried.

Letter of the Citizens' Central Committee of Brooklyn was read as follows:

FLATBUSH TRUST COMPANY,
FLATBUSH AND LINDEN AVENUES,
BROOKLYN, N. Y., December 11, 1906.

Hon. ALEXANDER E. ORR, *Chairman, Board of Rapid Transit Commissioners,* No. 320 Broadway, New York City:

DEAR SIR—Application is hereby made on behalf of the Citizens' Central Committee of Brooklyn for a hearing early in January on a proposition to connect the Williamsburgh Bridge with the loop recently proposed by the Mayor, which is to be constructed on that property now under condemnation in the neighborhood of the Staats-Zeitung Building.

Very truly yours,
(Signed) EDMUND D. FISHER,
Chairman, Committee on Bridge Connections.

The Deputy Comptroller moved the following resolution, which was seconded by Mr. Orr:

Resolved, That this Board grant a hearing to the Citizens' Central Committee of Brooklyn some time in January, as requested.

Ayes—The President, Mayor, Comptroller, and Commissioners Langdon and Jesup.
Nays—The Vice-President and Commissioners Smith and Ledyard.
Carried.

At this point the Mayor withdrew from the meeting.

Report of the Comptroller was presented, as follows, and it was understood that the Secretary would communicate with the owners, informing them of the same:

CITY OF NEW YORK—DEPARTMENT OF FINANCE,
COMPTROLLER'S OFFICE,
December 6, 1906.

Hon. HERMAN A. METZ, *Comptroller:*

SIR—The Board of Rapid Transit Railroad Commissioners have presented to this office an offer of Max Marx to release easements at the rate of $10 per front foot to property described on the list herewith attached, the fee title of which property is vested in the Sound Realty Company, Henry Morgenthal, —— Posener, —— Polsenski, John Levor and Max Marx, the said property being situated north of the Harlem Ship Canal, in the Borough of Manhattan.

In a communication under date of October 22, 1906, the Secretary of the Board of Rapid Transit Railroad Commissioners stated at the direction of President Orr that it is possible that the Rapid Transit Board may come to the conclusion that $6 per front foot, or possibly even less, will be sufficient for these easements, referring to the property north of the Harlem Ship Canal, the Rapid Transit route having been duly authorized from the present proposed terminus at Kingsbridge north to Van Cortlandt Park.

I see no reason why an amount beyond $6 per front foot should be paid for the property, in view of the fact that values are considerably below the values of property south of the Harlem Ship Canal, the easements of which have been acquired for $10 per front foot and less, and further, that no action has been taken to date for the construction of the proposed Rapid Transit route north of Kingsbridge. I would therefore respectfully recommend that the Board of Rapid Transit Railroad Commissioners adopt a resolution authorizing the acquisition of all easements of light, air and access appurtenant to property owned by Max Marx at the rate of $6 per front foot, as follows: Lot No. 140, Block 3405, Section 12, 50 feet frontage on Broadway; Lot No. 144, Block 3405, Section 12, 60 feet frontage on Broadway; Lot No. 112, Block 3405, Section 12, 205.6 feet frontage on Broadway; Lot No. 111, Block 3405, Section 12, 201.83 feet frontage on Broadway; Lot No. 17, Block 3269, Section 12, 150.01 feet frontage on Broadway; Lot No. 26, Block 3269, Section 12, 150.13 feet frontage on Broadway; Lot No. 1, Block 3270, Section 12, 75.19 feet frontage on Broadway, which may have been, or which may hereafter be taken or damaged in whole or in part, by the construction, maintenance or operation in, upon or over the streets above mentioned, of the Rapid Transit Railroad, built in accordance with the routes and general plan prescribed by the Board of Rapid Transit Railroad Commissioners of The City of New York, providing a satisfactory title can be secured by grant or release.

Respectfully submitted for approval,
(Signed) MORTIMER J. BROWN,
Appraiser of Real Estate, Department of Finance.

Approved:
(Signed) H. A. METZ, Comptroller.

Report of the Corporation Counsel was presented as follows, and it was understood that the Auditor would draw a voucher for the easements in question:

LAW DEPARTMENT—OFFICE OF THE CORPORATION COUNSEL,
NEW YORK, December 8, 1906.

Board of Rapid Transit Railroad Commissioners, No. 320 Broadway, Manhattan:

GENTLEMEN—I have caused the title to premises situated on the easterly side of Tenth avenue, in the Borough of Manhattan, 49 feet and 11 inches south of Two Hundred and Eighth street, having a frontage of 25 feet on Nagle avenue, to be examined, and find that Loton H. Slawson is the owner of and can convey the easements necessary for the construction, maintenance and operation of an elevated railroad in front of said property, subject to a mortgage made by Loton H. Slawson and Reba G., his wife, in the amount of $25,000, dated February 14, 1906, and recorded February 17, 1906, in Section 8, Liber 45, Mp. 284, in the office of the Register of the County of New York.

The purchase price is $250.

Respectfully yours,
(Signed) G. L. STERLING, Acting Corporation Counsel.

The following resolution was moved:

Resolved, That the President be and he hereby is authorized to execute contracts for renewal of telephone service as follows:

Northwest corner of Two Hundred and Thirtieth street and Broadway, 150 feet north of corner, at $135; 2,700 local messages.

Corner of One Hundred and Fifty-seventh street and Boulevard Lafayette, at $66; 1,000 local messages.

No. 1947 Broadway, at $165; 3,600 local messages; and $6 for one extension station.

No. 120 Liberty street, two sets, at $240; 4,800 local messages.

No. 320 Broadway, Room 401, $87; 1,500 local messages; and $6 for one extension station.

Ayes—The President, Vice-President, Comptroller and Commissioners Langdon, Smith, Jesup and Ledyard.
Nays—None.
Carried.

The following resolution was moved:

Resolved, That this Board hereby makes the following appointments and accepts the following resignations on the staff of the Chief Engineer:

Name and Title.	Salary.	To Take Effect.
Appointments.		
Samuel W. Berliner, Axeman	$720 00	Dec. 3, 1906
Cyril J. Carroll, Axeman	720 00	Dec. 3, 1906
Arthur P. Fogerty, Axeman	720 00	Dec. 3, 1906
William Meehan, Axeman	720 00	Dec. 5, 1906
James Dolan, Axeman	720 00	Dec. 5, 1906
Henry P. Labelle, Axeman	720 00	Dec. 5, 1906
Joseph A. Brunner, Axeman	720 00	Dec. 6, 1906
Resignations.		
Hartwell Bishop, Assistant Engineer	.....	Dec. 11, 1906
Harry C. Sweeney, Assistant Engineer	.....	Dec. 16, 1906

Ayes—The President, Vice-President, Comptroller and Commissioners Langdon, Smith, Jesup and Ledyard.
Nays—None.
Carried.

Letter of the Vice-President of the Interborough Company was read as follows:

INTERBOROUGH RAPID TRANSIT COMPANY,
NOS. 13 TO 21 PARK ROW,
NEW YORK, December 11, 1906.

Mr. B. L. BURROWS, *Secretary, Rapid Transit Railroad Commissioners, New York City:*

DEAR SIR—Your letter of December 1, addressed to Mr. Belmont, in relation to express service in the subway, has been referred to me.

Our Sunday service fluctuates considerably. For example, our Bronx Park traffic for the past few Sundays has fallen off considerably, while the traffic south of Ninety-sixth street has been increasing to such an extent that on the 2d inst. we ran six cars on all Lenox avenue expresses, and, commencing yesterday, six-car trains on the Broadway branch. Our Operating Department has instructions to watch the traffic carefully and arrange the service to meet the demands.

Yours truly,
(Signed) E. P. BRYAN, Vice-President.

The Secretary presented letter of the Board of Estimate and Apportionment, with resolution approving the requisition of the Board for $66,000 for expenses to the end of the present year.

Letter of the Chief Engineer was presented as follows:

NEW YORK, December 13, 1906.

Hon. ALEXANDER E. ORR, *President, Rapid Transit Board:*

DEAR SIR—In making the final studies for the subway, Lexington avenue route, based on the results of the extended surveys that have been made since the general

routes and plans were adopted by the Board, I have reached the conclusion, after mature consideration, that the best form of structure for this route is what may be termed a double-deck structure, that is, a structure having the local tracks near the street surface and the express tracks directly under the local tracks.

Furthermore, while still having these studies under consideration, it was determined by the Board that pipe galleries should be provided for all the rapid transit lines, and this has emphasized or added to the desirability of a double-deck structure on Lexington avenue.

Lexington avenue is 75 feet wide between building lines, with a general width of about 38 feet between the curbs. It is largely a residential street, and on a very large portion of it the main entrances to the buildings are above the sidewalk and are reached by flights of stairs from the sidewalk to the main floor.

To build the structure with four tracks substantially on the same level would necessitate the temporary removal of practically all of these stairways, iron railings and area enclosures that form a common feature of this residential district.

To depress the outside tracks to provide for pipe galleries would not change the above conditions, as in either case the sides of the excavation would be within about seven feet of the building lines, aad in order to provide for the pipe galleries the additional depth necessary, so near the building lines, would necessitate the underpinning of the buildings, with all the possibilities of rather serious inconvenience to abutting owners.

With a double-deck construction, while the depth of excavation would be somewhat greater, the limits of the excavation for the railroad would be about at the curb line, with only the excavation for pipe galleries encroaching somewhat on the sidewalk area, these galleries having comparatively little depth.

Also, with a double-deck railway, the alignments and grades will be adjusted to the best advantage, and finally, all conditions considered, the double-deck structure, in my opinion, can be more economically built with the minimum inconvenience to abutting property owners.

In view of the above, I desire to recommend to the Board that the Chief Engineer be authorized or directed to prepare the final plans for the Lexington avenue route, that it shall in the main be constructed as a double-deck railway.

Very truly yours,
(Signed) GEORGE S. RICE, Chief Engineer.

The following resolution was moved by Commissioner Smith and seconded by President Orr:

Whereas, The routes and general plan of construction for the rapid transit railway on Lexington avenue provide, among other things, that there shall be four tracks along Lexington avenue to be placed in a tunnel, and that all of the above mentioned tracks are to be substantially parallel with each other and on substantially the same level, except that, wherever required by special necessities of surface or subsurface structures or other special or local necessities, and except for the purpose of avoiding grade crossings at certain points, any one or more of the tracks may be depressed below the level of the other track or tracks to a depth of not more than twenty (20) feet; and

Whereas, This Committee is satisfied that the special necessities, both of the buildings abutting on Lexington avenue and of the subsurface structures in Lexington avenue which are proposed to be placed in pipe galleries, require that the tracks should not be on the same level in that street.

Resolved, That the detailed plans of construction as required by section 6 of the Rapid Transit Act shall be so prepared in accordance with the recommendation of the Chief Engineer as to show in general a double-deck structure in Lexington avenue, with two of the tracks placed substantially under the others and at a depth not exceeding twenty (20) feet below them, this Committee being of the opinion that such construction will be the best and most efficient system of rapid transit in view of the public needs and requirements.

Ayes—The President, Vice-President, Comptroller and Commissioners Langdon, Smith, Jesup and Ledyard.

Nays—None.

Carried.

Letter of the Chief Engineer was read as follows, and referred to the Comptroller for report:

NEW YORK, December 13, 1906.

Hon. ALEXANDER E. ORR, *President, Rapid Transit Board:*

DEAR SIR—Incident to the construction of ventilating chambers on Fourth avenue, a certain amount of asphalt pavement was cut out and destroyed at Eleventh, Sixteenth and Twentieth streets. On completion of the chambers the contractor was instructed to restore the pavement. This was in November.

There was some dispute or difference between the Division Engineer and the Uvalde Asphalt Paving Company as to the measurements of the pavement to be restored. The matter was referred to the Chief Engineer of the Highway Department, who had measurements made, and the area to be paid for was finally agreed upon in accordance with the measurements of the Highway Department.

On November 8, the Degnon Contracting Company gave the necessary orders to the Uvalde Company to do the work. The Uvalde Company demanded payment of $1,134.80 in advance, which demand the contractor declined to accede to. I have corresponded with Mr. Olney, Chief Engineer of the Highway Department, stating that in my opinion the demand for payment was an unusual one, and I could not require the contractor to make advance payments in such cases.

I inclose herewith correspondence in full, with report of the Division Engineer.

In the meantime the roadway at these points is in a very bad condition and is daily growing worse.

The Uvalde Asphalt Paving Company, under their contract with the Highway Department, are the proper parties to do this work, and I know of no legal method by which I can have the work done by any one else. I therefore submit this matter for your information and consideration.

Very truly yours,
(Signed) GEORGE S. RICE, Chief Engineer.

Mr. Rives reported the beginning of a suit by Charles H. Otis for $12,500 damages, growing out of the construction of the Brooklyn-Manhattan road in front of his house at the southwest corner of Henry and Joralemon streets, Brooklyn. It was understood that the counsel of the Board would confer with the Corporation Counsel on the matter.

Mr. Boardman spoke of the necessity of a prompt decision on the report of Referee Alton B. Parker in the Park avenue deviation matter, which was referred to the Comptroller at the meeting of November 15, 1906. It was understood that the Secretary would communicate with the Comptroller, asking him to hasten his report, particularly on the question of the reasonableness of the amount, leaving to the future, decision as to the incidence of the cost.

Mr. Boardman reported that the testimony was nearly closed in the proceeding before the Commission of the Appellate Division on the Brooklyn loop line.

The Auditor presented statements of the Interborough Company as follows:

Statements as follows were presented by the Auditor:

INTERBOROUGH RAPID TRANSIT COMPANY.

STATEMENT SHOWING CAPITAL INVESTED AS OF OCTOBER 31, 1906.

Capital stock issued to acquire lease of subway and all interests therein.	$12,100,000 00
Cost of real estate	1,487,288 00
Expenditures for subway equipment	24,239,593 00
Total	$37,826,881 00

Gross Receipts and Operating Expenses of the Subway (Embraced in Contract No. 1) and Rental Interest on Bonds of The City of New York, for Year Ended October 31, 1906.

Gross receipts	$6,921,653 47
Operating expenses	3,101,934 68
Net earnings	$3,819,718 79
Rental interest on City bonds	1,428,289 58
Balance	$2,391,429 21

State of New York, County of New York, ss.:

Daniel W. McWilliams, being duly sworn, says he is treasurer of the Interborough Rapid Transit Company, assignee of the lease part of the contract for the construction, maintenance and operation of a rapid transit railroad, between John B. McDonald and The City of New York, dated February 21, 1900; that the foregoing statement subscribed by him is true.

DANIEL W. McWILLIAMS.

Sworn to and subscribed before me this 5th day of December, 1906.

GEORGE E. PHELPS,
Notary Public, Kings County, New York.
Certificate filed in New York County.

RAPID TRANSIT RAILROAD RENTAL.

TENTATIVE CALCULATION TO BE USED TO ESTABLISH THE SINKING FUND PAYMENT TO BE MADE BY THE INTERBOROUGH RAPID TRANSIT COMPANY TO THE CITY OF NEW YORK, ON ACCOUNT OF RENTAL FOR THE OPERATION OF THE MANHATTAN-THE BRONX DIVISION OF THE RAPID TRANSIT RAILROAD.

October 31, 1905—October 31, 1906.

Bonds issued	$44,550,000 00
Estimated amount thereof used to pay for easements, etc. ($44,550,000 by 3.237)	1,442,083 00
Estimated amount available for construction purposes	$43,107,917 00
Estimated amount required for that portion of the road not in operation at October 31, 1906 ($43,107,917 by 1.24)	534,538 00
Estimated apportionment of bonds issued under Contract No. 1, to that part of the road in operation October 31, 1906	$42,573,379 00
Sinking Fund payment to be made to the City on account of rental for the year October 31, 1905—October 31, 1906	$425,733 79

INTERBOROUGH RAPID TRANSIT COMPANY.

RENTAL CHARGES AND NET RECEIPTS OF CASH BY THE CITY COMPTROLLER FROM INTERBOROUGH RAPID TRANSIT COMPANY, MANHATTAN-THE BRONX.

Rental Charges.		*Receipts.*	
For the Year Ending.	Payments to the Sinking Fund.	Date.	Amount.
October 31, 1906	$425,733 79	December 7, 1906	$425,799 78

INTERBOROUGH RAPID TRANSIT COMPANY.

STATEMENT WITH REFERENCE TO THAT PORTION OF THE "BROOKLYN-MANHATTAN RAPID TRANSIT RAILROAD" CONSTRUCTED AND IN OPERATION JULY 31, 1906.

Capital Invested as of July 31, 1906.

Amount expended over amount received from the City and reimbursed to the Rapid Transit Subway Construction Company by the Interborough Rapid Transit Company	$2,616,904 00
Cost of real estate and equipment	206,385 00
Total	$2,823,289 00

Gross Receipts and Operating Expenses of the Subway (Embraced in Contract No. 2), and Rental Interest on Bonds of The City of New York, from the Date of Opening of Any Portion Thereof (January 16, 1905), to July 31, 1906:

Gross receipts	$868,861 05
Operating expenses	152,338 49
Net earnings	$716,522 56
Rental interest on City bonds	20,559 84
Balance	$695,962 72

State of New York, County of New York, ss.:

Daniel W. McWilliams, being duly sworn, says he is treasurer of the Interborough Rapid Transit Company, assignee of the lease part of the contract for the construction, maintenance and operation of a rapid transit railroad between the Rapid Transit Subway Construction Company and The City of New York, dated July 21, 1902; that the foregoing statement subscribed by him is true.

DANIEL W. McWILLIAMS.

Sworn to and subscribed before me this 6th day of December, 1906.

GEORGE E. PHELPS,
Notary Public, Kings County.
Certificate filed in New York County.

RAPID TRANSIT RAILROAD RENTAL.

STATEMENT ESTIMATING THE SINKING FUND PAYMENT DUE THE CITY OF NEW YORK BY THE INTERBOROUGH RAPID TRANSIT COMPANY EQUATED TO JULY 31, 1906, ON THAT PORTION OF THE BROOKLYN-MANHATTAN DIVISION OF THE RAPID TRANSIT RAILROAD OPENED FOR OPERATION AT DATES AS FIXED BY THE AGREEMENT DATED DECEMBER 14, 1905, MODIFYING THE CONTRACT (NO. 2) WITH THE RAPID TRANSIT SUBWAY CONSTRUCTION COMPANY, DATED JULY 21, 1902.

Date of Opening.	Proportion of Cost of Original Contract.	Annual Sinking Fund Payment of One Per Centum.	Actual Time in Operation at July 31, 1906.	Payment Equated to July 31, 1906.
January 16, 1905	$27,397 26	$273 97	18-15/30 Mo.	$422 37
June 12, 1905	214,196 76	2,141 97	13-19/30 Mo.	2,433 50
July 10, 1905	283,935 24	2,839 35	12-21/30 Mo.	3,004 98
	$525,529 26	$5,255 29		$5,860 85

INTERBOROUGH RAPID TRANSIT COMPANY.

RENTAL CHARGES AND NET RECEIPTS OF CASH BY THE CITY COMPTROLLER FROM INTERBOROUGH RAPID TRANSIT COMPANY, BROOKLYN-MANHATTAN.

Rental Charges.		*Receipts.*	
For the Period.	Payments to the Sinking Fund.	Date.	Amount.
To July 31, 1906.....	$5,860 85	December 7, 1906.....	$5,255 29

Resolution of the Board of Aldermen was presented as follows and referred to the Chief Engineer for report:

In the Board of Aldermen.

Whereas, The constant dripping of oil and other wastes along the elevated structure of the subway division operated by the Interborough Rapid Transit Company is injurious to people having to walk under the same; therefore be it

Resolved, That the Rapid Transit Commission of The City of New York be and it is hereby requested to compel the Interborough Rapid Transit Company to place drip pans over the crosswalks underneath the structure along Westchester avenue and Southern Boulevard, Borough of The Bronx.

Adopted by the Board of Aldermen December 4, 1906, a majority of all the members elected voting in favor thereof.

(Signed) P. J. SCULLY, Clerk.

Miscellaneous communications were presented and referred to respective committees.

The Board then adjourned.

BION L. BURROWS, Secretary.

FIRE DEPARTMENT

TRANSACTIONS FROM OCTOBER 8, 1906, TO OCTOBER 13, 1906, BOTH DAYS INCLUSIVE.

New York, October 8, 1906.

Communications received were disposed of as follows:

Filed.

From Department of Finance—Transmitting indemnity bonds of St. John's Cemetery, Harnden & Belmont, Willet R. Skillman and Otto Nicolai for the use and keeping of explosives for blasting purposes. Bonds filed in the office of Inspector of Combustibles.

From Corporation Counsel—Return to writ of certiorari in the matter of the People ex rel. Henry C. Dailey against the Fire Commissioner for verification. Reply communicated.

From Municipal Civil Service Commission—Correcting the names and addresses of men who have been certified for appointment as firemen.

From American-La France Fire Engine Company—

1. Requesting information relative to gates on engines being built on their contracts. Reply communicated.

2. In relation to the payment of their bill for two 75-foot hook and ladder trucks. Reply communicated.

From Deputy Commissioner, boroughs of Manhattan, The Bronx and Richmond—Forwarding charges preferred against delinquent members of the uniformed force, with testimony at trials held October 4, 1906, and findings as follows:

Fireman third grade Thomas A. Barry, Engine Company 29—For "Absence without leave" (seven charges), "Neglect of duty" and "Being under the influence of liquor, drug or compound" (two charges). Dismissal from the Department recommended.

Foreman George A. La Monte, Engine Company 7—For "Neglect of duty." Cautioned.

Fireman fourth grade John Weiss, Hook and Ladder Company 5—For "Absence without leave." Fined two days' pay.

Fireman second grade James J. Fagan, Engine Company 58—For "Absence without leave." Fined one day's pay.

Fireman first grade William Yates, Engine Company 38—For "Neglect of duty" and "Violations of section 231, rules and regulations." Fined one day's pay on each charge and transfer recommended.

Foreman James Earely, Engine Company 29—For "Neglect of duty." Charge dismissed.

Fireman first grade Joseph Miller (No. 1), Engine Company 40—For "Absence without leave." Fined five days' pay.

Fireman first grade Joseph W. Kelly, Engine Company 74—For "Absence without leave" and "Violations of sections 204 and 292, rules and regulations." Testimony taken and case laid over pending trial on additional charges.

Fireman first grade William A. Stack, Engine Company 35—For "Failing to answer alarm of fire and accompany apparatus to station." Fined one day's pay.

Fireman first grade Martin H. O'Leary, Engine Company 35—For "Reckless driving." Charge dismissed.

Assistant Foreman John F. Murphy, Hook and Ladder Company 9—For "Neglect of duty." Charge dismissed.

Fireman first grade John T. Brown, Hook and Ladder Company 9—For "Neglect of duty." Charge dismissed.

Fireman fourth grade Thomas McGinn, Hook and Ladder Company 9—For "Reckless handling of tiller wheel." Charge dismissed.

Assistant Foreman John J. Jolly, Hook and Ladder Company 6—For "Violation of special order No. 27, 1906." Charge dismissed.

Fireman third grade John D. Drew, Hook and Ladder Company 6—For "Reckless handling of tiller wheel." Charge dismissed.

Foreman Timothy Ahearn, Engine Company 34—For "Violation of special order No. 27, 1906." Charge dismissed.

Fireman third grade Frank R. Casey, Engine Company 34—For "Reckless driving." Charge dismissed.

Assistant Foreman William J. Lennon (No. 1), Engine Company 37—For "Neglect of duty." Cautioned.

Fireman first grade Dennis O'Shaughnessy, Engine Company 37—For "Reckless driving." Cautioned.

Assistant Foreman Samuel P. Lynch, Hook and Ladder Company 3—For "Violation of special order No. 27 of 1906." Charge dismissed.

Fireman fourth grade Arthur Magnussen, Hook and Ladder Company 3—For "Reckless handling of tiller wheel." Cautioned.

Assistant Foreman William W. Beyel, Hook and Ladder Company 22—For "Neglect of duty." Charge dismissed.

Fireman second grade John J. Baisley, Hook and Ladder Company 22—For "Reckless handling of tiller wheel." Cautioned.

Cable Splicer Joseph Strauss, Fire Alarm Telegraph Bureau—For "Disobedience of orders" and "Conduct prejudicial to good order and discipline." Fined two days' pay.

Cable Splicer John J. Lynch, Fire Alarm Telegraph Bureau—For "Neglect of duty" and "Absence without leave." Fined two days' pay.

Cable Splicer Francis J. McNally, Fire Alarm Telegraph Bureau—For "Neglect of duty" and "Absence without leave." Fined one day's pay.

Mason Owen I. Cavanaugh—For "Neglect of duty" and "Absence without leave." Fined one day's pay.

Lineman Edward Ryan, Fire Alarm Telegraph Bureau—For "Neglect of duty" and "Absence without leave." Fined one day's pay.

Findings approved.

From Deputy Commissioner, boroughs of Brooklyn and Queens—

1. Transmitting charges preferred against delinquent members of the uniformed force, together with testimony taken at trials held in the borough of Brooklyn October 3, 1906, and findings as follows:

Foreman James Geatons, Engine Company 102—For "Failing to keep agreement to pay debt." Charge dismissed.

Fireman first grade Thomas Halpin, Engine Company 77—For "Neglect of duty." Charge dismissed.

Fireman first grade Charles Price, Engine Company 118, detailed to Engine Company 77—For "Neglect of duty." Charge dismissed.

Fireman first grade John P. Heffernan, Engine Company 143—For "Absence without leave." Fined one day's pay.

Fireman first grade William H. Jones, Hook and Ladder Company 55, detailed to Engine Company 145—For "Absence without leave." Fined one day's pay.

Fireman second grade John Smalley, Hook and Ladder Company 64—For "Disrespect to superior officer." Charge dismissed.

Fireman second grade John J. Hughes, Hook and Ladder Company 68—For "Disobedience of order," "Absence without leave" and "Failing to keep agreement to pay debt." Fined five days' pay on first charge, one day's pay on second charge, or six days' pay in all. Third charge dismissed.

Findings approved.

2. Forwarding charges preferred against delinquent members of the uniformed force, together with testimony taken at trials held in the borough of Queens on October 2, 1906, and findings as follows:

Fireman first grade John J. Martin (No. 2) Engine Company 159—For "Absence without leave" (two charges). Fined two days' pay on first charge and one day's pay on second charge.

Fireman first grade James Flynn, Engine Company 161—For "Being under the influence of an intoxicating beverage, drug or compound." Fined five days' pay.

Fireman first grade Samuel Hague, Engine Company 167—For "Failing to keep agreement to pay debt." Charge dismissed.

Findings approved.

From Chief of the Sixteenth Battalion—Reporting relative to meritorious conduct claimed to have been performed by Fireman first grade John J. Sheridan, engine company 39, on May 8, 1906, at station 627. Ordered that the name of Fireman first grade John J. Sheridan be placed on the "Roll of Merit" class "B."

From Acting Inspector of Combustibles—Acknowledging receipt of fees for licenses.

From Chief of Battalion in charge of Hospital and Training Stables—Reporting death of horse 637.

From Superintendent of Buildings—Transmitting corrected proof of contract and specifications for a storehouse to be erected on Myrtle avenue, near North Elliott place, Brooklyn.

From Bookkeeper—Returning communication from the Department of Finance transmitting bill of the Title Guaranty and Trust Company for $60 for examination of title to property on the westerly side of White Plains road north of Morris Park avenue with voucher. Voucher forwarded to Department of Finance.

Referred.

From A. S. Gilbert—Requesting modification of order to install fire appliances in premises No. 111 Nassau street. To Bureau of Violations and Auxiliary Fire Appliances.

From Block & Co.—Complaining of a defective flue, premises No. 86 University place. To Fire Marshal.

From Reed & Keller—Requesting information relative to permit for the use of benzine. To Inspector of Combustibles.

From Mr. Anderson and others—Complaining of defective flue, premises No. 458 Hudson street. To Fire Marshal.

From S. B. Rosenthal—Requesting information relative to violations against premises No. 236 East Twenty-fourth street. To Bureaus of Violations and Auxiliary Fire Appliances and Fire Marshal.

From A. N. Hand—Acknowledging receipt of notice to install fire appliances in premises Nos. 315 and 317 Grand street, and stating that he has no interest of any kind in said premises. To Bureau of Violations and Auxiliary Fire Appliances.

From N. K. Howell—Complaining of reckless blasting by Canavan Brothers on the westerly side of Edgecombe avenue, north of One Hundred and Thirty-fifth street. To Acting Inspector of Combustibles.

From Charles Sullivan—Requesting copy of rules and regulations relative to equipment for hotel buildings. To Bureau of Violations and Auxiliary Fire Appliances.

From Mrs. McCann—Complaining of the storage of combustible material, premises No. 434 West Fortieth street. To Bureau of Combustibles. Copy forwarded to the Tenement House Department.

From Sisters of the Divine Compassion—Requesting to be advised if an order has been issued for the installation of fire alarm box in premises No. 136 Second avenue. To Bureau of Violations and Auxiliary Fire Appliances.

From Thomas H. Hodges, Foreman Defender Hose Company 1—Transmitting list of members of Defender Hose Company 1 of the late village of Eastchester who rendered service as firemen from June 12, 1904, up to and including dates set after their names. To Chief of Department for report.

From Anonymous—Complaining of lack of light in hallways, premises No. 224 East Fifty-seventh street. To Tenement House Department.

From Foreman Engine Company 53—Reporting defective flue, premises No. 208 East Ninety-seventh street. To Fire Marhsal.

From Foreman Engine Company 80—Reporting defective flue, premises Nos. 1495 Amsterdam avenue. To Fire Marshal.

From Foreman Hook and Ladder Company 1—Reporting chimney fire on the 5th inst., premises No. 298 Broadway. To Acting Inspector of Combustibles.

From Bureau of Violations and Auxiliary Fire Appliances—Reporting that on reinspection of premises Nos. 50 and 52 Thomas street, No. 22 Warren street, No. 127 Reade street and Nos. 25, 45 and 47 Park place it was found that the requirements of the Department were not complied with therein. To Bureau for the Recovery of Penalties.

Expenditures Authorized.

BOROUGHS OF MANHATTAN, THE BRONX AND RICHMOND.

Additions and alterations to quarters of hook and ladder company 4.....	$985 00
Incidental expenses, bookkeeper.....	500 00
Repairs, etc., to automobiles in use by the Commissioner and Deputy Chief of Department	610 08
Supplies for automobiles.....	686 00

BOROUGHS OF BROOKLYN AND QUEENS.

Rubber tires and repairs to same.....	$300 00

Bills Audited.

BOROUGHS OF MANHATTAN AND THE BRONX.

Schedule 204 of 1905— Apparatus, supplies, etc.....	$7,320 00
Schedule 101 of 1906— Apparatus, supplies, etc.....	$12,077 87
Schedule 102 of 1906— Sites and buildings.....	$206 25
Schedule 103 of 1906— Apparatus, supplies, etc.....	$201 50
Schedule 104 of 1906— Apparatus, supplies, etc.....	$3,495 62

BOROUGH OF RICHMOND.

Schedule 62 of 1904— Fire alarm telegraph system, Borough of Richmond.....	$98 23

Fireman third grade Thomas A. Barry, engine company 29, having been found guilty of absence without leave without proper authority for five days from September 26, 1906, is deemed and held to have resigned from the Department, and it was ordered that his name be dropped from the rolls from 8 a. m., October 1, 1906.

Advertisement inviting proposals for furnishing hose and for the erection of a new building was forwarded for publication to the CITY RECORD.

Approved draft and printer's proof of form of contract for the erection of a building on the north side of Myrtle avenue, near North Elliott place, Brooklyn, was forwarded to the Corporation Counsel for approval.

Request for examination for clerks of the third grade John A. Langel and Thomas F. Aram for promotion to clerkships of the fifth grade was forwarded to the Municipal Civil Service Commission.

Request for examination of eighth grade clerks George P. Perley and Saul J. Rosenthal for promotion to clerkships of the tenth grade was forwarded to the Municipal Civil Service Commission.

Pursuant to provision of section 720 of the Greater New York Charter, Deputy Fire Commissioner Hugh Bonner was designated as authorized to perform all the duties and exercise all the powers of Fire Commissioner, except the appointment to, detail or dismissal of any member of the uniformed force from October 8, 1906, until October 22, 1906, inclusive, and notice thereof forwarded to the Mayor and Comptroller.

Request for the issue of a certificate authorizing the reinstatement of fourth grade Fireman William P. Seaver, who voluntarily resigned from the department April 6, 1906, was forwarded to the Municipal Civil Service Commission.

New York, October 9, 1906.

Opening of Proposals.

In the presence of the Commissioner and a representative of the Comptroller.

Affidavits as to due publication in the CITY RECORD of advertisement inviting proposals were read and filed, and approved forms of contracts were submitted.

Proposals were received as follows:

BOROUGHS OF BROOKLYN AND QUEENS.

For furnishing all the labor and materials required for the erection and completion of a new building for engine company 120, to be located on the southerly side of Eleventh street, east of Seventh avenue:

1.	Thomas F. Cockerill & Son, No. 147 Columbus avenue	$46,718 00
2.	George Hildebrand, No. 38 Park row	47,777 00
3.	George F. Driscoll, No. 391 Fulton street, Brooklyn	48,000 00
4.	Daniel J. Ryan, No. 723 Third avenue, Brooklyn	45,000 00
5.	F. W. Carlin Construction Company, No. 370 Washington street, Brooklyn	45,800 00
6.	Thomas B. Leahy Building Company, No. 1 East Forty-second street	44,885 00
7.	Thomas G. Carlin, No. 215 Montague street	49,967 00
8.	James J. Buckley, No. 408 Tenth avenue	48,407 00
9.	J. & L. Moreland Company, No. 1910 Park avenue	49,000 00

—each with security deposit of $1,100.

For furnishing all the labor and materials required for the erection and completion of a new building for an engine company to be located on the southerly side of Union street, west of Seventh avenue:

1.	Thomas F. Cockerill & Son, No. 147 Columbus avenue	$42,313 00
2.	F. W. Carlin Construction Company, No. 370 Washington street, Brooklyn	42,703 00
3.	George Hildebrand, No. 38 Park row	43,440 00
4.	George F. Driscoll, No. 391 Fulton street, Brooklyn	41,998 00
5.	James McArthur, No. 516 Beach street, Richmond Hill, Long Island	50,732 00
6.	Daniel J. Ryan, No. 723 Third avenue, Brooklyn	42,719 00
7.	Thomas B. Leahy Building Company, No. 1 East Forty-second street	43,773 00
8.	Thomas C. Carlin, No. 215 Montague street, Brooklyn	45,127 00
9.	James J. Buckley, No. 407 Tenth avenue	43,596 00
10.	J. & L. Moreland Company, No. 1910 Park avenue	43,000 00

—each with security deposit of $1,000.

Contracts were awarded as follows:

For the erection and completion of a building for engine company 120, to the Thomas B. Leahy Building Company, on their proposal of $44,885.

For the erection and completion of a new building for an engine company, to be located on the southerly side of Union street, near Seventh avenue, to George F. Driscoll, on his estimate of $41,998.

The proposals of Thomas G. Leahy Building Company and George F. Driscoll were forwarded to the Comptroller for his action on the sureties.

The proposals of the unsuccessful bidders were ordered on file.

Ordered, That the security deposits be transmitted to the Department of Finance.

Communications received were disposed of as follows:

Filed.

From Department of Finance—Returning proposal of William P. McGarry for erecting a new building for quarters of engine company 159, on Greenpoint avenue, Long Island City, with approval of the sureties thereon.

From Department of Water Supply, Gas and Electricity—Relative to low water pressure at hydrants on Dutch street. Copy forwarded to Chief of Department.

From J. W. Millard, Naval Architect—Reporting progress in building two new fireboats. Copy forwarded to Chief of Department and Cashier.

From Chief of Department—Returning communication from Edward R. Warren, secretary, American Free Art League, Boston, relative to advertising sign boards, with report thereon. Reply communicated.

From Foreman Engine Company 32—Reporting that three new standard double hydrants placed on John street, between Nassau street and Broadway, have not yet had water turned on. Copy forwarded to Department of Water Supply, Gas and Electricity.

From Foreman Hook and Ladder Company 12—Applying for a new telephone. Approved and ordered.

From Fire Marshal, boroughs of Brooklyn and Queens—Reporting 56 fires during the week ending October 6, 1906.

From Acting Inspector of Combustibles—Acknowledging receipt of fees for licenses.

From Inspector in charge of Fire Alarm Telegraph—

1. Recommending that application be made to the Commissioner of Public Works for permission to open street pavement from the northwest to the southwest corners of Rector street and Trinity place. Approved. Application forwarded.

2. Recommending that application be made to the Empire City Subway Company, Limited, for duct space in Washington street and Little Twelfth street. Approved. Application forwarded.

3. Recommending that application be made to the Department of Water Supply, Gas and Electricity for permission to change the location of two fire alarm lamp-posts. Approved. Application forwarded.

4. Returning communication from the Manhattan Fire Alarm Company requesting permission to connect the Wyoming Hotel, Seventh avenue and Fifty-fifth street, with fire alarm box 510, with recommendation thereon that permission be granted. Approved. Chief of Department, Inspector in charge and company notified.

From Bureau of Violations and Auxiliary Fire Appliances—

1. Returning communication from the State Superintendent of Elections requesting inspection of hotels, with report thereon that request has been complied with.

2. Returning communication from the Police Department requesting inspection of premises Nos. 113 to 119 West Fortieth street, known as Mendelssohn Hall, with report thereon that the requirements of the department have been complied with. Police Department notified.

3. Returning communications from F. P. Hummel and S. B. Rosenthal, requesting information relative to violations against certain premises with reports thereon. Replies communicated.

4. Reporting that on reinspection of premises No. 19 Park place, No. 16 Spruce street and Nos. 59 and 61 Reade street, it was found that the requirements of the department were complied with therein. Owners notified.

5. Reporting that on reinspection of premises No. 117 Chambers street it was found that the requirements of this department were complied with. Owner and Bureau for the Recovery of Penalties notified.

6. Recommending that order to provide perforated pipes in the cellar and subcellar of premises No. 13 Mott street be modified to require said perforated pipes in the subcellar only. Recommendation approved. Owner notified.

From William F. Taple, Painter—Notice that he is an exempt fireman. Copy forwarded to the Municipal Civil Service Commission.

Referred.

From Police Department—Requesting inspection of premises No. 1465 Third avenue, known as the White Horse Tavern. To Bureau of Violations and Auxiliary Fire Appliances.

From Bureau for the Recovery of Penalties—

1. Requesting reinspection of premises Nos. 381 to 387 Broadway and No. 164 West Seventy-fourth street. To Bureau of Violations and Auxiliary Fire Appliances.

2. Requesting reinspection of premises on Broadway near Lockwood avenue, and Broadway between Clark and Comago avenues, Far Rockaway, borough of Queens. To Bureau of Violations and Auxiliary Fire Appliances.

From National District Telegraph Company—Requesting that a box number be designated for the box installed in premises of the Standard Emulsion Company, Nos. 139 and 141 Greene street. To Inspector in charge of Fire Alarm Telegraph.

From Special Fire Alarm Electrical Signal Company—Requesting that a box number be designated for Manhattan Opera House, Nos. 315 to 321 West Thirty-fourth street. To Inspector in charge of Fire Alarm Telegraph.

From M. Hallanan—Requesting inspection of perforated pipes installed in premises Nos. 186 to 190 West Fourth street. To Bureau of Violations and Auxiliary Fire Appliances.

From William Kretzler—Requesting inspection of perforated pipes installed in premises Nos. 381 to 387 Broadway. To Bureau of Violations and Auxiliary Fire Appliances.

From Anonymous—Complaints of violations of the tenement house laws, premises No. 8 Ludlow street and No. 97 Broome street. To Tenement House Department.

Expenditures Authorized.

BOROUGHS OF BROOKLYN AND QUEENS.

Rubber tires for apparatus	$547 25

Bills Audited.

BOROUGHS OF MANHATTAN AND THE BRONX.

Schedule 105 of 1906—	
Apparatus, supplies, etc.	$3,240 14
Schedule 106 of 1906—	
Apparatus, supplies, etc.	$6,112 81

New York, October 10, 1906.

Communications received were disposed of as follows:

Filed.

From Corporation Counsel—Returning with approval thereon printer's proof and form of contract for the erection of a new building on West One Hundred and Eighty-first street; contract in triplicate and form of advertisement for additions to headquarters building, borough of Brooklyn, and draft of form of contract for additions and alterations to certain department buildings, together with printer's proof.

From Department of Finance—

1. Receipt for security deposits accompanying proposals received on the 9th inst.

2. In relation to orders accompanying bills forwarded for payment. Copy forwarded to Chief of Battalion in charge of Repair Shops and to Cashier.

3. Advising that the Comptroller's certificates have been endorsed on the contracts of Walter E. Parfitt for architect services. Certificates filed with contract.

From Municipal Civil Service Commission—In relation to the employment of Messrs. Carty and Miller as engineers for preparing plans, etc., for new fire alarm telegraph system. Reply communicated.

From Bureau of Buildings—Acknowledging receipt of communication of the 6th inst. relative to violations of the Building Code, premises No. 143 Grand street.

From Frederick W. Winslow—Relative to certificate of incorporation of Rosedale hook and ladder company.

From J. W. Millard, Naval Architect—Concerning partial payments for building two new fireboats. Reply communicated.

From D. L. Driscoll—Offering for sale to this department plot of ground at the corner of Mary Ann and Hannah streets, Tompkinsville. Request for purchase forwarded to the Comptroller.

From Deputy Commissioner, boroughs of Brooklyn and Queens—

1. In relation to roll of merit cases for the year 1905.

2. Returning communication from the Department of Finance transmitting diagram of vacant property located on Provost street, between India and Huron streets, borough of Brooklyn, with report thereon that the property mentioned is not suitably located for the purposes of this department. Reply communicated.

From Foreman Engine Company 68—Reporting death of horse 637.

From Assistant Foreman Hook and Ladder Company 14—Reporting the recovery of badge 1224 by Fireman Lawrence T. Walsh. Fine remitted.

From Jesse D. Stryker, Machinist—Tendering his resignation. Resignation accepted, to take effect October 9, 1906.

From Bureau of Violations and Auxiliary Fire Appliances—

1. Reporting that on reinspection of premises No. 18 Waverley place, Nos. 181 and 197 William street, and Nos. 381 to 387 Broadway, it was found that the requirements of the Department were complied with therein. Owners notified.

2. Recommending that no modification to orders affecting premises Nos. 98 and 100 Bleecker street, Nos. 45 and 47 Park place, Nos. 114 and 116 Reade street and Nos. 50 and 52 Thomas street through to Nos. 200 and 202 Church street be allowed. Recommendation approved. Representatives of owners notified.

3. Returning communication from Charles Sullivan requesting copy of regulations covering fire alarm equipment for hotels with report thereon. Reply communicated.

4. Returning communication from Hand, Bonney & Jones concerning ownership of premises Nos. 315 and 317 Grand street, with report thereon. Reply communicated.

5. Returning communication from the Police Department requesting inspection of premises No. 48 East Fourteenth street, known as Crystal Hall, with report that the requirements of the department have been complied with. Police Department notified.

6. Returning communication from the Title Insurance Company requesting information relative to violations against certain premises with report thereon. Reply communicated.

7. Reporting that on reinspection of premises No. 987 Madison avenue, it was found that the requirements of the department were complied with therein. Owner notified.

8. Reporting that on reinspection of premises Nos. 381, 383 and 387 Broadway, and No. 164 West Seventy-fourth street, it was found that the requirements of the department were complied with therein. Bureau for the Recovery of Penalties notified.

9. Reporting that on reinspection of premises Nos. 98 and 100 Flushing avenue, borough of Queens, it was found that the requirements of the department have been complied with therein. Bureau for the Recovery of Penalties notified.

10. Reporting that on reinspection of premises known as Sheerin Hotel, Fairview avenue and Ocean front, Hammels, borough of Queens, it was found that the law was complied with therein. Bureau for the Recovery of Penalties notified.

11. Reporting that on reinspection of premises known as Lohmeer Hotel, Rockaway, borough of Queens, it was found that the requirements of this department were complied with therein. Bureau for the Recovery of Penalties notified.

12. Recommending that the Bureau for the Recovery of Penalties be requested to discontinue proceedings against Lexington Hotel, located at Hammels station, Rockaway Beach, as the present building is to be torn down. Approved. Bureau for the Recovery of Penalties notified.

Referred.

From Mayor's Office—Transmitting communication from James C. Gibson requesting information relative to fire hose in use by the department. To Chief of Department.

From Department of Finance—

1. Advising that on October 3 and October 5, 1906, the sum of $5,000 was deposited to the credit of the Fire Department, boroughs of Richmond and Queens, proceeds of bond issue for sites, erection of, additions and alterations to buildings for extension of the paid system. To Bookkeeper. Copy forwarded to Deputy Commisioner, boroughs of Brooklyn and Queens.

2. Stating that on October 3, 1906, the sum of $3,000 was deposited to the credit of the Fire Department Fund for sites, buildings and telegraph system, boroughs of Manhattan and The Bronx. To Bookkeeper.

3. Advising that on October 1, 1906, the sum of $5,048.85 was deposited to the credit of the Fire Department Fund for sites, buildings and telegraph system, boroughs of Manhattan and The Bronx. To Bookkeeper.

4. Advising that on October 5, 1906, the sum of $8,000 was deposited to the credit of the Revenue Bond Fund for the purchase of hose for use of the volunteer companies, borough of Queens. To Bookkeeper. Copy forwarded to Deputy Commissioner, boroughs of Brooklyn and Queens.

From New York Telephone Company—Stating that they expect to remove their wires within the next month from pole line on St. Ann's avenue, from One Hundred and Thirty-fourth street to Westchester avenue and requesting to be informed if the Fire Department wishes to assume ownership of said line. To Inspector in charge Fire Alarm Telegraph.

From Huth & Baker and Platzek & Stroock—Requesting information relative to violations against certain premises. To Bureau of Violations and Auxiliary Fire Appliances.

From Vraisted, Goodman & Hirschfield—Relative to notices to install certain fire appliances in premises No. 1580 Amsterdam avenue and No. 501 West One Hundred and Twenty-eighth street. To Bureau of Violations and Auxiliary Fire Appliances.

From Woodlawn Taxpayers' Association—Requesting that a fire alarm box be placed in the vicinity of Two Hundred and Thirty-fifth street and Napier avenue. To Inspector in charge of Fire Alarm Telegraph.

From W. E. Ward—Relative to his request that fire alarm lamp-post on the northwest corner of Cedar street and Trinity place be moved to a place north of its present location. To Inspector in charge Fire Alarm Telegraph.

From Morris A. Rabinowitz—Requesting an inspection of fire appliances installed in premises No. 35 Cannon street. To Bureau of Violations and Auxiliary Fire Appliances.

From Thomas W. Lamb—Requesting list of fire appliances required for the new Circle Theatre, Broadway and Sixtieth street. To Bureau of Violations and Auxiliary Fire Appliances.

From Caeser Misch, Inc.—Relative to claim amounting to $16.65 against a member of the uniformed force. To Chief of Department.

From Anonymous—

1. Complaining of dangerous conditions existing in premises No. 165 East Forty-ninth street. To Fire Marshal.

2. Complaining of lack of light in hallways of premises Nos. 228 and 230 East One Hundred and Twelfth street. To Tenement House Department.

From Municipal Civil Service Commission—Requesting to be informed why the name of Joseph Kelly, Stoker, has been left off the payroll. To Chief of Department for report.

From Foreman Engine Company 13—Reporting that iron water tank on top floor of Nos. 109 and 111 Prince street rests on wooden beams. To Bureau of Buildings.

From Foreman Engine Company 67—Reporting that outside fire escapes in front of building known as West End Hotel, One Hundred and Seventy-third street and Riverside drive, have wooden floor. To Bureau of Buildings.

From Foreman Engine Company 73—Reporting relative to certain violations of the Building Code, premises Nos. 726 and 728 Westchester avenue. To Bureau of Buildings.

From Foreman Engine Company 202—Reporting lack of fire escapes on premises Nos. 21 and 44 New York avenue, and premises bounded by Forest, Tompkins, Willow and Chestnut avenues, Nos. 388 and 390 Bay street, Clifton, S. I.; northeast corner of New York avenue and Cliff street, and Cliff street and water front, Fort Wadsworth, and northeast corner New York and Pennsylvania avenues, Rosebank, S. I. To Bureau of Buildings.

From Foreman Hook and Ladder Company 1—Reporting chimney fire on the 8th inst., premises No. 148 Duane street, and a defective flue in the same premises. To Fire Marshal and Acting Inspector of Combustibles.

From Foreman Hook and Ladder Company 3—Recommending that fire escapes be placed on premises Nos. 832 and 834 Broadway. To Bureau of Buildings.

Expenditures Authorized.

BOROUGHS OF MANHATTAN AND THE BRONX.

Incidental expenses, Bureau of Combustibles..... $250 00

BOROUGHS OF BROOKLYN AND QUEENS.

Constructing new chimney flue, quarters engine company 121..... $235 00

New York, October 11, 1906.

Fire Commissioner Francis J. Lantry appeared at headquarters of the Fire Department and was met by Commissioner John H. O'Brien, to whom he submitted his warrant of appointment, as follows:

City of New York,
Office of the Mayor.

Know all men by these presents, that I, George B. McClellan, Mayor of The City of New York, under and by virtue of the authority of the statutes in such case made and provided, do hereby appoint Francis J. Lantry Fire Commissioner of The City of New York, to hold office until his successor has been appointed and has qualified.

In witness whereof I have hereunto set my hand and affixed my seal of office October 10, 1906.

[SEAL.] (Signed) GEORGE B. McCLELLAN, Mayor.

The above appointment having been made in conformity with chapter 466 of the Laws of 1901, commonly known as the Greater New York Charter, the Fire Commissioner assumed control of the Fire Department in the following circular:

Circular No. 1.

Headquarters, Fire Department, City of New York,
Nos. 157 and 159 East Sixty-seventh Street,
Borough of Manhattan, October 11, 1906.

The undersigned hereby announces his appointment as Fire Commissioner by his Honor George B. McClellan, Mayor, and by virtue thereof assumes charge of the Department.

The rules and regulations of the department as now in force will be continued until further orders.

(Signed) FRANCIS J. LANTRY, Fire Commissioner.

Communications received were disposed of as follows:

Filed.

From President, borough of The Bronx—In relation to transfer of Fireman Frank Gieger to the Municipal Building, borough of The Bronx.

From Department of Finance—

1. Requesting that amount of rentals for premises leased by the City for the use of this department be clearly and definitely stated and included in the estimate for the year 1907. Reply communicated.

2. Transmitting indemnity bonds of the New York Contracting Company, Arthur F. McGinness, Joseph Burns, James F. Handy and Charles Perillo, for the use and keeping of explosives for blasting purposes. Bonds filed in the office of Inspector of Combustibles.

From Municipal Civil Service Commission—Acknowledging receipt of request for the recertification of the name of George P. Kitchen and Thomas F. Dempsey for appointment as firemen.

From Department of Water Supply, Gas and Electricity—In relation to repairs to fire hydrants complained of by F. T. Witte Hardware Company, No. 106 Chambers street.

From Empire City Subway Company, Limited—Advising that duct space has been set apart for the use of this department in Washington street and Little West Twelfth street. Copy forwarded to Inspector in charge of Fire Alarm Telegraph.

From William A. Hawley—Tendering his resignation as secretary to the Commissioner, to take effect from this date. Resignation accepted.

From J. W. Millard—Relative to progress made in constructing two new fireboats.

From Frederick Roth—Declining appointment as fireman.

From Robert C. Curry, Chief of Bayside Volunteer Fire Department—Requesting to be advised when paid system will be installed in Bayside. Reply communicated.

From James S. Evans—In relation to proposed visit of baseball team composed of San Francisco firemen.

From Merchants' Association of New York—Relative to appropriation for new fire alarm telegraph system in the borough of Manhattan.

From Deputy Commissioner, boroughs of Brooklyn and Queens—Returning communication from the Department of Finance relative to claim 50012, filed by Annie Stevens for money alleged to be due for rental of premises on the westerly side of St. Andrews street, borough of Brooklyn, with report thereon.

From Acting Chief of Department—In relation to the third rail system of the New York Central and Hudson River Railroad Company, and recommending that arrangements be made whereby current can be promptly shut off upon notice from this department in case of fire. Copy forwarded to Chief Engineer of the New York Central and Hudson River Railroad Company.

From Foreman Engine Company 21—Reporting relative to obstruction to hydrants on First avenue, caused by the Edison Company building conduits. Copy forwarded to the Edison Company.

From Foreman Engine Company 32—Reporting that owing to the condition of Beekman street the company will be delayed and hindered responding promptly to alarms of fire. Copy forwarded to President, borough of Manhattan.

From Assistant Foreman Engine Company 202—Reporting poor condition of hydrants company district. Copy forwarded to the Department of Water Supply, Gas and Electricity.

From Bureau of Violations and Auxiliary Fire Appliances—

1. Reporting that on reinspection of premises No. 28 Warren street, No. 96 Liberty street, Nos. 42 to 46 Warren street, it was found that the requirements of the department were complied with therein. Owners notified.

2. Recommending that notice of requirements of fire appliances in premises Nos. 114 and 116 Thompson street be modified to read perforated pipes in subcellar only. Recommendation approved, owner notified.

From Inspector in Charge Fire Alarm Telegraph—Recommending that application be made to the Commissioner of Public Works for permission to open certain street pavements. Approved. Application forwarded.

Referred.

From President, borough of The Bronx—

1. Transmitting copy of communication from the Oak Land and Dock Company, requesting that a fire hydrant be placed in the vicinity of One Hundred and Fiftieth street and East river. To Chief of Department.

2. Transmitting copy of communication from the Rock Plaster Company, in the matter of having fire alarm box placed in the vicinity of their factory at Oak Point, adjoining tracks of the New York, New Haven and Hartford Railroad Company. To Chief of Department for report.

From Department of Finance—

1. Transmitting communication from Hon. Samuel P. Williams, Comptroller, City of Rochester, N. Y., requesting information relative to disinfectant. To Cashier.

2. Transmitting bill of the Crescent Realty Company for $25 for appraising premises No. 25 Devoe street, Brooklyn. To Deputy Commissioner, boroughs of Brooklyn and Queens.

3. Transmitting copy of communication from C. W. Culkins, city auditor, Cincinnati, O., requesting information relative to the purchase of forage. To Cashier.

From Combination Ladder Company—Requesting an extension of time in which to complete their contract dated February 23, 1906, for furnishing and delivering pompier and beam ladders. To Cashier.

From New York Telephone Company—

1. Requesting to be advised if the Fire Department will assume ownership of pole on the northeast corner of Westchester and Jackson avenues. To Inspector in charge Fire Alarm Telegraph.

2. Requesting permission to attach a six-pin cross-arm on fire alarm telegraph poles on the south side of Walnut street, between Jerome avenue and Grand Boulevard. To Inspector in charge Fire Alarm Telegraph.

From Manhattan Fire Alarm Company—Relative to denial of permission to connect premises of the Wyoming Hotel with fire alarm box 510. To Inspector in charge Fire Alarm Telegraph.

From Charles Ahrenfeldt & Son—Requesting inspection of perforated pipes installed in premises Nos. 50 to 54 Murray street. To Bureau of Violations and Auxiliary Fire Appliances.

From National Amalgamated Painters and Decoraters of New York—Relative to members of the uniformed force doing painting work on the fireboat "Zophar Mills." To Chief of Department.

From Standard Oil Company—Relative to operating tank wagons for delivering gasoline or naphtha within the limits of New York City. To Acting Inspector of Combustibles.

From J. Edgar Leaycraft & Co.—Relative to a notice from this department to install fire appliances in premises No. 59 East Broadway. To Bureau of Violations and Auxiliary Fire Appliances.

From Empire Square Realty Company, Incorporated—Requesting to be advised of the requirements of this department regarding the fire apparatus for theatres. To Bureau of Violations and Auxiliary Fire Appliances.

From Tenement House Department—Transmitting anonymous complaint relative to dangerous conditions existing in premises No. 312 West One Hundred and Twenty-second street. To Fire Marshal.

From W. R. Willcox, Postmaster—Transmitting blueprint showing just how it is proposed to attach a letter box to fire alarm test post at Third avenue and Thirty-fourth street. To Inspector in charge Fire Alarm Telegraph.

From E. Schwartz—Complaining of the lack of fire escapes and stairways, premises No. 652 East Twelfth street. To Bureau of Buildings. Copy forwarded to Bureau of Factory Inspection.

From Anonymous—Complaint of violations of the tenement house laws, premises No. 553 West Fiftieth street, and No. 158 West One Hundred and Thirty-first street. To Tenement House Department.

From Foreman Engine Company 9—Reporting defective fiue, premises Nos. 15½ and 17 Bowery. To Fire Marshal.

From Foreman Engine Company 12—Reporting chimney fire on the 8th inst., premises No. 456 Pearl street. To Acting Inspector of Combustibles.

From Foreman Engine Company 16—

1. Reporting chimney fire on the 6th inst., premises No. 225 East Twenty-fifth street. To Acting Inspector of Combustibles.

2. Reporting defective flue, premises No. 225 East Twenty-fifth street. To Fire Marshal.

From Assistant Foreman Engine Company 11—Reporting the storage of a large quantity of paper bags in cellar of premises No. 300 Delancey street. To Tenement House Department. Copy to Acting Inspector of Combustibles.

From Foreman Engine Company 30—Reporting chimney fire on the 6th inst, No. 328 Hudson street. To Acting Inspector of Combustibles.

From Foreman Engine Company 32—

1. Reporting the storage of combustible material in premises, No. 51 Beekman street, without a permit. To Acting Inspector of Combustibles.

2. Reporting dangerous conditions existing in premises No. 59 Beekman street. To Fire Marshal.

From Foreman Engine Company 42—Reporting defective flue, premises No. 1102 Jackson avenue. To Fire Marshal.

From Foreman Engine Company 54—Reporting the storage of large quantities of lath and other wood in vacant lot, premises Nos. 328 to 336 West Forty-eighth street. To Bureau of Combustibles.

From Foreman Engine Company 73—

1. Reporting the sale of paints, oils, etc., premises No. 725 East One Hundred and Forty-ninth street without a permit. To Bureau of Combustibles.

2. Reporting defective flue, premises No. 663 Prospect avenue. To Fire Marshal.

From Foreman Engine Company 81—Reporting relative to window being broken in quarters of company. To Superintendent of Buildings.

From Foreman Engine Company 203—Reporting a defective flue, premises No. 25 Broad street, Stapleton. To Fire Marshal.

From Foreman Hook and Ladder Company 6—Reporting chimney fire on the 10th inst., premises No. 21 Allen street. To Acting Inspector of Combustibles.

From Assistant Foreman Hook and Ladder Company 14—

1. Reporting the storage of packing boxes, etc., in front of premises No. 109 East One Hundred and Twenty-fourth street. To Acting Inspector of Combustibles.

2. Reporting chimney fire on the 10th inst., premises No. 300 East One Hundred and Twenty-fifth street. To Acting Inspector of Combustibles.

From Foreman Hook and Ladder Company 20—Reporting relative to wiring for electric lights in company quarters. To Superintendent of Buildings.

From Bureau of Violations and Auxiliary Fire Appliances—Reporting non-compliance with orders of this department to provide fire appliances in premises located at South Grandview avenue and Ocean Front, borough of Queens, known as Edgemere Hotel. To Bureau for the Recovery of Penalties.

Michael J. Healion was appointed secretary to the Commissioner, with salary at the rate of $2,500 per annum, to take effect from October 11, 1906.

Contract of the Schaefer-Carroll Contracting Company, No. 366 Lenox avenue, Manhattan, for building a boiler flue in rear of quarters of engine company 7, amounting to $2,180, and contract of P. J. Langler, No. 91 Grand avenue, Brooklyn, for furnishing various supplies for the use of the department amounting to $2,195.60, having been duly executed in accordance with the provisions of the law, were forwarded to the Department of Finance.

Advertisement inviting proposals for additions and alterations to headquarters building, borough of Brooklyn, was forwarded for publication in the CITY RECORD.

Bonds of the Fire Commissioner as treasurer of the Fire Department and as trustee and treasurer of the New York Fire Department Relief Fund in the sums respectively of $20,000 and $100,000 were forwarded to the Comptroller for filing.

New York, October 12, 1906.

Communications received were disposed of as follows:

Filed

From Department of Water Supply, Gas and Electricity—

1. In relation to placing fire hydrants on Webster avenue.

2. Acknowledging receipt of communication of the 3d inst., relative to fire hydrant in front of premises No. 17 Spruce street. Copy forwarded to Chief of Department.

From Bureau of Lamps and Gas—In relation to request for permission to change the location of a fire alarm signal and lamp-post. Copy forwarded to Inspector in charge Fire Alarm Telegraph.

From Bureau of Buildings—Acknowledging receipt of communication of the 10th inst., relative to certain violations of the building code.

From William A. Anderson, Superintendent, Bureau of Surveys, New York Board of Fire Underwriters—Acknoyledging receipt of communication of the 12th inst. Copy forwarded to Acting Inspector of Combustibles.

From Editor "Municipal Journal and Engineer"—Requesting a list of bids received recently by the Fire Department. Reply communicated.

From Deputy Commissioner, boroughs of Brooklyn and Queens—

1. Requesting that the fine imposed upon Fireman first grade James Flynn, engine company 161, be remitted, owing to the fact that said Flynn died on the 9th inst.

2. Recommending that Tinsmith Matthew Dunnigan be paid the prevailing rate of wages. Reply communicated.

From Chief of Department—

1. Returning communication from the Adjustment Corporation relative to a bill against a member of the uniformed force with report thereon. Reply communicated.

2. Returning communication from office of the Mayor, transmitting letter from J. C. Gibson, Chairman, Fire, Water and Light Committee, City of Winnepeg, requesting information relative to fire hose with report thereon. Reply communicated.

3. Returning communication from the Municipal Civil Service Commission, requesting information relative to Stoker James Kelly, with report thereon. Reply communicated.

4. Returning communication from Department of Water Supply, Gas and Electricity, regarding the consumption of water at fires, with report thereon. Reply communicated.

5. Reporting that special fire alarm box, public school 20, has been removed, and recommending that the Board of Education be requested to replace the box. Approved. Board of Education notified.

6. Report in relation to working test of pumping station at Coney Island. Copy forwarded to Department of Water Supply, Gas and Electricity.

From Acting Chief of Department—Recommending that the New York Telephone Company be requested to move the telephone from main floor of quarters of engine company 16 to second floor. Approved and ordered.

From Chief of Forty-fifth Battalion—Reporting that three men were killed at Pennsylvania tunnel, Long Island City, on the 11th inst.

From Foreman Engine Company 17—Reporting bad condition of street pavement corner of Broome and Ludlow streets. Copy forwarded to President, borough of Manhattan.

From Foreman Hook and Ladder Company 21—Reporting relative to new patent draft spring on trial with company.

From Inspector in charge of Fire Alarm Telegraph—

1. Returning communication from the National District Telegraph Company requesting that a box number be designated for premises Nos. 139 and 141 Green street, with report thereon, recommending that No. 3-25 be assigned. Approved. Chief of Department, Inspector in charge and company notified.

2. Returning communication from the Special Fire Alarm Electrical Signal Company requesting box number for premises Nos. 315 to 321 West Twenty-fourth street, with recommendation thereon that No. 3-29 be assigned. Recommendation approved. Chief of Department, Inspector in charge and company notified.

From Bureau of Violations and Auxiliary Fire Appliances—

1. Recommending modification of notice to install standpipes in premises known as Colonial Hotel, foot of South Ammerman avenue, borough of Queens. Recommendation approved. Bureau for the Recovery of Penalties notified.

2. Returning communication from J. Romberg & Son, requesting inspection of standpipes installed in premises Nos. 112 to 116 Bleecker street, and Nos. 733 and 735 Broadway, with report thereon. Owner notified.

3. Returning communication from A. S. Gilbert, requesting modification of order to install perforated pipes in premises No. 111 Nassau street, with recommendation thereon that no modification be ordered. Recommendation approved. Reply communicated.

From Superintendent of Buildings—

1. Recommending that gas burners be substituted for heating the engine, quarters of engine company 13. Recommendation approved. Copy forwarded to the Department of Water Supply, Gas and Electricity.

2. Transmitting resignation of Henry Daube, architectural draughtsman. Resignation accepted, to take effect October 2, 1906.

From Chief of Battalion in charge of Repair Shops—

1. Requisition for one blacksmith. Requisition forwarded to the Municipal Civil Service Commission.

2. Returning communication from the Chief of Department, relative to hose which burst at fires, with report thereon.

Referred.

From Department of Finance—

1. Relative to voucher filed in favor of Gasteiger & Schaeffer for the sum of $458.55 for hay, straw and oats furnished under orders July 11 and 20, 1906. To Cashier.

2. Requesting information relative to voucher filed in favor of P. Donnelly for $6.10 for fire hat furnished to Acting Chief, Forty-first Battalion. To Cashier.

3. Requesting information relative to voucher filed in favor of the Automobile Riding Company for $70 for rent of automobile for Deputy Commissioner Wise. To Deputy Commissioner, boroughs of Brooklyn and Queens.

From Corporation Counsel—Requesting that the men who witnessed the collision between the fireboat "New Yorker" and float No. 16 of the Lehigh Valley Railroad, on May 28, 1906, be notified to call at the office of the Corporation Counsel. To Chief of Department.

From Klein & Rosenblatt—Relative to claim of their client, Emil Brandt, against a member of the uniformed force. To Chief of Department.

From S. Caplis—Requesting an extension of time in which to install fire appliances in premises No. 162 William street. To Bureau of Violations and Auxiliary Fire Appliances.

From C. A. Stein—Complaining of dangerous conditions existing in premises Nos. 5 and 7 West One Hundredth street. To Acting Inspector of Combustibles.

From Bernard Engel—Relative to his bill of $8.25 against a member of the uniformed force. To Chief of Department.

From New York Chapter, Knights of Columbus—Requesting detail of firemen on occasion of the celebration of the discovery of America by Columbus on the night of October 12, 1906, at Carnegie Hall. To Chief of Department.

From Herman Roth and Samuel Goldstein—Requesting information relative to violations filed against certain premises. To Bureaus of Violations and Auxiliary Fire Appliances and Fire Marshal.

From William Kretzler—Requesting inspection of fire appliances installed in premises Nos. 381, 383, 385 and 387 Broadway. To Bureau of Violations and Auxiliary Fire Appliances.

From Children's Aid Society—Requesting permission to whitewash side wall of engine company quarters, Henry street. To Chief of Department.

From Vito Mangino—Complaining of lack of light in hallways of premises No. 129 Mott street. To Tenement House Department.

From Anonymous—Complaining of violations of the tenement house laws, premises No. 2266 Second avenue, No. 238 East Eighty-fourth street, and No. 700 East One Hundred and Forty-third street. To Tenement House Department.

From Foreman Engine Company 33—Reporting that tanks on top floor of premises No. 10 Astor place rest on wooden beams. To Bureau of Buildings.

Requisition for an eligible list from which to appoint one blacksmith for repair shops was forwarded to the Municipal Civil Service Commission.

New York, October 13, 1906.

Communications received were disposed of as follows:

Filed.

From Municipal Civil Service Commission—Requesting that Richard J. Tobin, a pattern-maker, be directed to call at the office of the Municipal Civil Service Commission. Copy forwarded to Chief of Battalion in charge of repair Shops.

From Standard Oil Company—Acknowledging receipt of communication of the 9th inst., relative to permit for tank wagon delivery of gasoline and naphtha at Far Rockaway, L. I.

From F. K. Winslow—Acknowledging receipt of certificate of incorporation of Rosedale hose company 1.

From Deputy Commissioner, boroughs of Brooklyn and Queens—Forwarding charges preferred against delinquent members of the uniformed force, together with testimony taken at trials held in the borough of Brooklyn, October 10, 1906, and findings as follows:

Fireman first grade William J. Regan, Engine Company 104—For "Neglect of duty." Charge dismissed.

Fireman first grade Patrick J. Wallace, Engine Company 104—For "Absence without leave," "Not being in proper uniform outside of company quarters," and "Entering premises where liquor was sold." Charges dismissed.

Fireman second grade Charles F. Lubben, Engine Company 124—For "Absence without leave." Fined one day's pay.

Findings approved.

From Foreman Engine Company 16—Reporting loss of cap badge 487, Fireman second grade William P. Mulligan. Fine imposed.

From Foreman Robert Wray, Engine Company 77—Applying to be retired on half pay after more than forty years' continuous service. Approved and ordered that Foreman Robert Wray, of engine company 77, be retired and dismissed the service of the department on an annual pension of $1,080, to take effect from 8 a. m., October 16, 1906.

From Superintendent of Buildings—

1. In relation to the erection of a frame extension adjoining quarters of engine company 62, and which is secured to and held up by the wall of the engine company. Copy forwarded to the President, borough of The Bronx, and owner of premises.

2. Relative to the contract of Patrick Gallagher for the erection of an apparatus house on One Hundred and Thirty-fifth street, west of Lenox avenue, and recommending that certain work be done by the department. Approved, contractor notified.

From Bureau of Violations and Auxiliary Fire Appliances—

1. Reporting that on reinspection of premises on Broadway near Lockwood avenue; Greenwood avenue, between Lockwood avenue and Broadway, and Broadway, between Clark and Cormaga avenue, borough of Queens, it was found that the requirements of the department were not complied with therein in any case. Bureau for the Recovery of Penalties notified.

2. Reporting that on reinspection of premises located on Chase avenue and Ocean front, known as Congress Boarding House, Rockaway, and Avery's Inn on Vernon avenue, Arverne, borough of Queens, it was found that the requirements of the department were complied with therein. Bureau for the Recovery of Penalties notified.

3. Reporting that on reinspection of Nos. 50 to 54 Murray street it was found that the requirements of the department were complied with therein. Owners notified.

4. Returning communication from the Police Department, requesting inspection of premises known as the White Horse Tavern, No. 1465 Third avenue, with report thereon that the requirements of this department have been complied with therein. Police Department notified.

5. Returning communication from J. Edgar Leaycraft & Co., relative to an order to provide fire appliances in premises No. 59 East Broadway, with report thereon. Reply communicated.

6. Returning communication from Thomas W. Lamb, relative to fire appliances required in the New Circle Theatre, with report thereon. Reply communicated.

7. Returning communication from R. Cable, Jr., Title Insurance and Trust Company, Huth & Baker and Platzek & Stroock, requesting information relative to violations against certain premises, with reports thereon. Replies communicated.

From Cashier—Returning communication from the American Surety Company concerning certain contracts of the American-La France Fire Engine Company for furnishing apparatus to the Fire Department, with report thereon. Reply communicated.

Referred.

From Commissioners of the Sinking Fund—Advising that they have no voice in the matter of leasing of the steam launch "Velox." To Cashier.

From Department of Water Supply, Gas and Electricity. Relative to the color which the high pressure service fire hydrants are to be painted. To Chief of Department.

From National District Telegraph Company—Requesting inspection of their night watchman's signal and fire alarm box to be installed in theatres. To Bureau of Violations and Auxiliary Fire Appliances.

From James Tisdale—Requesting two keys for fire alarm box 4-185, located at Boulevard and Orchard street. To Chief of Department.

From Gutta Percha and Rubber Manufacturing Company—Relative to a length of 2½-inch hose which is imperfect. To Chief of Battalion in charge of Repair Shops.

From Manhattan Fire Alarm Company—Requesting permission to connect premises Nos. 1 to 9 West Thirty-fourth street with fire alarm box 462. To Inspector in charge of Fire Alarm Telegraph.

From William Geymund—Complaining of the gas pipes in premises No. 115 Division street. To Fire Marshal. Copy forwarded to the Tenement House Department.

From Empire Card and Paper Company—Complaining of hallways of premises No. 52 Elizabeth street being obstructed. To Acting Inspector of Combustibles. Copy forwarded to Bureau of Factory Inspection.

From P. J. Masbach—Requesting inspection of perforated pipes installed in premises No. 49 Warren street. To Bureau of Violations and Auxiliary Fire Appliances.

From Anonymous—

1. Complaining of the storage of trunks and boxes in premises No. 260 West One Hundred and Twenty-ninth street. To Acting Inspector of Combustibles. Copy forwarded to the Tenement House Department.

2. Requesting the removal of clothes lines from fire-escapes and ladders, premises Nos. 73 to 79 East One Hundred and Nineteenth street. To Tenement House Department.

From Assistant Foreman Engine Company 15—Reporting the storage of oils, etc., premises No. 445 Grand street, without a permit. To Acting Inspector of Combustibles.

From Foreman Engine Company 32—Reporting obstructed hallways, premises No. 53 Beekman street. To Acting Inspector of Combustibles.

From Foreman Engine Company 33—

1. Relative to the tanks on roof of premises No. 10 Astor place resting on wooden beams. To Bureau of Buildings.

2. Reporting lack of fire escapes, premises Nos. 395 and 397 Lafayette street. To Bureau of Buildings.

3. Recommending that fireproof doors be placed in all archways, premises Nos. 32 to 36 Bleecker street. To Bureau of Buildings.

From Foreman Engine Company 56—Reporting a defective flue, premises No. 141 West Eighty-seventh street. To Fire Marshal.

From Foreman Hook and Ladder Company 14—Recommending that outside fire escapes be placed on premises No. 209 East One Hundred and Twenty-fifth street. To Bureau of Buildings.

From Theatre Detail—Reporting that during evening performance on the 6th inst. at the Metropolis Theatre there were sixty persons seated in the aisles in the gallery and 150 persons standing therein. To Bureau for the recovery of penalties.

Expenditures Authorized.

BOROUGHS OF BROOKLYN AND QUEENS.

Buttons $60 00

Transactions of the Department for weeks ending July 21 and July 28, 1906, were forwarded for publication in the CITY RECORD.

BOROUGHS OF BROOKLYN AND QUEENS.

Communications received were disposed of as follows:

Filed.

From State Department of Labor—In relation to the serious lack of water supply, premises No. 647 Fulton street. Reply communicated. Department of Water Supply, Gas and Electricity notified.

From Police Department—

1. In relation to the application of Schneider Brothers for a concert license for premises No. 1770 Pitkin avenue, known as Metropolitan Music Hall. Reply communicated.

2. In relation to application of Druisano Degee for a concert license for Liberty Hall, No. 213 Liberty street, borough of Queens. Reply communicated.

From Department of Water Supply, Gas and Electricity—

1. Complaining of the signal box on the pole on the southwest corner of Jay and Front streets, Brooklyn. Reply communicated.

2. Complaining of dangerous condition of pole on the northeast corner of Jay and Sands streets, Brooklyn. Reply communicated.

From Chief of Columbia Fire Department—In relation to the necessity of additional fire alarm boxes in the Dunton district, borough of Queens. Reply communicated.

From Mrs. A. Fine—Complaining of the dangerous conditions and unlighted halls, premises No. 28 Cooke street. Reply communicated. Tenement House Department notified.

From A. F. Glover—In relation to installing signs over fire alarm boxes, Richmond Hill, showing location of keys. Reply communicated.

From John Nullmeyer—In relation to the right of a citizen to break a window to secure fire alarm box key. Reply communicated.

From H. Krantz Manufacturing Company—In relation to the installation of a special building box in their factory. Reply communicated.

From F. C. J. Pessaro—In relation to the dangerous condition of building adjoining No. 293 Logan street. Reply communicated. Bureau of Buildings notified.

From Peet, McInerney & Powers—Requesting designation of a number for fire alarm box to be installed in public school 151. Reply communicated.

From Charles W. Strohbeck—In relation to the necessity for additional fire hydrants on St. Edward's, Bedford and Raymond streets. Reply communicated.

From Abrahamson & Potter—Requesting information relative to violations against certain premises. Reply communicated.

From Commercial Construction Company—In relation to designation of numbers for fire alarm boxes to be installed in public schools in the borough of Brooklyn. Reply communicated.

From Fire Marshal—Report of fires for the week ending October 8, 1906.

From Assistant Inspector of Combustibles—Report of the Bureau of Combustibles for the week ending October 6, 1906.

Referred.

From Mrs. A. Dixon—Complaining of dangerous conditions existing in premises No. 179 Berkeley place. To Bureaus of Fire Marshal and Combustibles.

From Department of Water Supply, Gas and Electricity—In relation to removing wires on Nostrand avenue, between Putnam avenue and Park avenue. To Fire Alarm Telegraph Bureau.

From Foreman Engine Company 128—Reporting the sale of kerosene oil, premises No. 882 Fifth avenue, Brooklyn, by J. D. Cuccio, on license issued to E. H. Wirth, former occupant. To Bureau of Combustibles.

From Deputy Chief of Department—

1. In relation to the lack of fire escapes, premises No. 116 Henry street. To Department of Buildings.

2. In relation to defective condition of new quarters of engine company 102. To Assistant Superintendent of Buildings.

From Foreman Engine Company 111—Reporting violation of section 65 of the Building Code, premises No. 58 Lee avenue. To Bureau of Buildings.

From Foreman Engine Company 161—Reporting death of Fireman first grade James Flynn on the 9th inst. To the Commissioner.

From Anonymous—

1. Complaining of the dangerous conditions existing in premises No. 325 Stagg street and No. 160 Ninth street. To Bureau of Fire Marshal.

2. Complaining of lack of fire escapes, premises Nos. 330 to 334 Gates avenue. To Tenement House Department.

3. Complaining of the storage of benzine, premises No. 320 Christopher street. To Bureau of Combustibles.

From Commanding Officers of Companies—Reporting chimney fires as follows:

Foreman Engine Company 115, premises No. 83 India street.

Foreman Engine Company 117, premises No. 178 Lewis avenue.

Foreman Engine Company 155, premises No. 137 Tilden avenue.

Foreman Hook and Ladder Company 57, premises No. 86 Truxton street and No. 49 Snedeker avenue.

Foreman Hook and Ladder Company 61, premises No. 1 Hunterfly place.

To Bureau of Combustibles.

ALFRED M. DOWNES, Secretary.

BOARD OF WATER SUPPLY.

New York, December 5, 1906.

The Board met pursuant to adjournment.

Present—Commissioners J. Edward Simmons (President); Charles N. Chadwick and Charles A. Shaw.

The minutes of the last meeting were read and approved.

The following bills were approved and ordered forwarded to the Comptroller for payment:

Voucher No.	In Favor Of.	Amount.
2187.	Payroll, Laborers, week ending November 24, 1906.....	$1,894 25
2188.	Payroll, supplementary, week ending November 17, 1906.....	8 00
2189.	Payroll, supplementary, week ending November 3, 1906.....	6 00
		$1,908 25

Statements showing the financial condition of the Board of Water Supply at the close of business, November 30, 1906; also the detailed classified expenditures on account of surveys, maps, plans, etc., during the month of November, 1906, and the total expenditures from June 9, 1905, to November 30, 1906, were read and ordered on file.

A statement setting forth the expenditures made and liabilities incurred by the Board of Water Supply during the month of November, 1906, was read and ordered forwarded to the Comptroller, in compliance with section 36, chapter 724, Laws of 1905.

An abstract of the expenditures made and liabilities incurred by the Board of Water Supply during the month of November, 1906, was read and ordered forwarded to the CITY RECORD, in compliance with section 36, chapter 724, Laws of 1905.

Commissioner Shaw reported that on November 30, 1906, he appointed Henry J. Nurick, Nos. 20 to 28 Webster avenue, The Bronx, to the position of Assistant Engineer, with salary at the rate of $1,650 per annum, to take effect upon assignment to duty by the Chief Engineer.

On motion, the above appointment made by Commissioner Shaw was confirmed.

Commissioner Shaw reported that on December 3, 1906, he appointed John E. Ashe, Jr., Patchogue, L. I., to the position of Stenographer and Typewriter to this Board for an emergency period of seven days, commencing December 3, 1906, with salary at the rate of $900 per annum.

On motion, the above emergency appointment made by Commissioner Shaw was confirmed.

On motion, it was

Resolved, That the following men be and they are hereby appointed Gage Keeper to this Board, with salary at the rate of $5 per month, to take effect upon assignment to duty by the Chief Engineer:

C. P. Deyo, Lexington, N. Y.

Uriah W. Haines, Haines Falls, N. Y.

On motion, it was

Resolved, That Richard J. N. Gebert, No. 307 East Fifty-fifth street, be and he is hereby appointed to the position of Junior Clerk to this Board, pursuant to the rules and classifications of the Municipal Civil Service Commission, with salary at the rate of $600 per annum, to take effect upon assignment to duty by the Chief Engineer.

On recommendation of the Chief Engineer, it was

Resolved, That, as Harry L. France, Laborer, has been absent from duty without leave for a period of more than five days, his services be and are hereby dispensed with after December 5, 1906.

The following weekly financial statement was read and ordered placed on file:

1905.				
June 25.	Corporate Stock authorized.....		$100,000 00	
Nov. 24.	Corporate Stock authorized.....		500,000 00	
Dec. 8.	Corporate Stock authorized.....		1,002,000 00	
1906.				
Nov. 23.	Corporate Stock authorized.....		10,000,000 00	$11,602,000 00
Dec. 4.	Vouchers Nos. 1 to 2189, both inclusive, registered from June 9, 1905, to December 4, 1906		$887,443 39	
	Estimated liabilities on open orders, unliquidated	$20,311 34		
	Registered contract liabilities.....	59,089 62		
	Estimated liabilities under special agreements	127,892 21		
			207,293 17	1,094,736 56
Dec. 4.	Amount available			$10,507,263 44

On recommendation of the Chief Engineer, it was

Resolved, That the salary of Oscar Dudley, Laborer, be and is hereby fixed at the rate of $3 per diem, to take effect December 10, 1906.

On recommendation of the Chief Engineer, it was

Resolved, That the salary of J. J. Murphy, Foreman, be and is hereby fixed at the rate of $125 per month, to take effect December 10, 1906.

A communication, dated November 28, 1906, was received from the Secretary of the Board of Estimate and Apportionment, transmitting certified copies of resolutions adopted by the Board of Estimate and Apportionment on November 23, 1906, as follows:

"Resolved, That the Board of Water Supply of The City of New York be and is hereby requested to have duplicate maps prepared showing the layout of property to be acquired for the proposed Catskill aqueduct, under the jurisdiction of said Board, and transmit the same to the offices of the Comptroller."

"Resolved, That, pursuant to the provisions of chapter 724 of the Laws of 1905, the Board of Estimate and Apportionment hereby authorizes the Comptroller to issue Corporate Stock of The City of New York, in the manner provided by section 169 of the Greater New York Charter, to the amount of ten million dollars ($10,000,000), the proceeds whereof to be applied to the uses and purposes of the Board of Water Supply."

The communication of the Secretary of the Board of Estimate and Apportionment, also the above resolutions, were read for the information of the Board, and ordered filed.

On motion, the matter of furnishing copies of maps to the Comptroller, showing the layout of property to be acquired for the proposed Catskill aqueduct, was referred to the Chief Engineer for action.

A communication, dated December 1, 1906, was received from the Secretary of the Board of Estimate and Apportionment, transmitting certified copy of resolution adopted by the Board of Estimate and Apportionment on November 23, 1906, as follows:

"Resolved, That the Board of Estimate and Apportionment, pursuant to the provisions of chapter 724 of the Laws of 1905, hereby approves of the action taken by the Board of Water Supply of The City of New York in regard to the acquisition of property known as Parcel No. 77 on the map of lands approved by the Board of Estimate and Apportionment on October 12, 1906, situated in the town of Phillipstown, Putnam County, State of New York, and authorizes the acquisition of said property at private sale at a price not exceeding four hundred and twenty-five dollars ($425)."

On motion, the communication of the Secretary of the Board of Estimate and Apportionment, also above resolution, were read for the information of the Board, and ordered filed.

On motion, it was

Resolved, That the memorandum filed with the lease of building No 147 Varick street, New York City, sets forth the basis on which electric current for lighting is to be charged, namely:

Electric current for lighting, at the rate of 5-8 cents per hour for each 16 candle power lamp or the equivalent thereof; 50 watts to the meter.

It is further agreed that electric current for power will be provided at the rate of 2 1-8 cents per kilowatt hour, provided the Board of Water Supply shall use not less than 108 1-2 kilowatt hours per week, equivalent to 2-horse power. Bills to be rendered and paid for monthly.

Weekly report of Chief Engineer read and ordered on file.

The Chief Engineer made a further report (Communication No. 497) on the matter of filing and indexing the correspondence and other documents of the Headquarters Department of the Engineering Bureau, and, on motion, it was

Resolved, That an informal agreement be made with the Clarke & Baker Company, No. 258 Canal street, New York City, for filing and indexing the correspondence and other documents of the Headquarters Department of the Engineering Bureau, at the rate of eighty dollars ($80) per month, for a period not to exceed six months, commencing December 12, 1906, with the understanding that said agreement may be terminated at the end of any month prior to the end of the six months' period.

At the suggestion of Commissioner Chadwick, communication of the Chief Engineer No. 474 was taken from the table; and, on motion, it was

Resolved, That the Chief Engineer be and he is hereby instructed to prepare maps suitable for condemnation of all property to be acquired for the Hill View reservoir, for the Kensico reservoir, for the filtration plant at Scarsdale, and for the Ashokan reservoir.

Communication No. 495 was received from the Chief Engineer, transmitting report of Messrs. Allen Hazen and Geo. W. Fuller, regarding the advisability of stripping the Ashokan reservoir, and, on motion, this matter was referred to Commissioner Chadwick for report.

On motion, the Board adjourned.

THOS. HASSETT, Secretary.

POLICE DEPARTMENT.

Sanitary Company (Boiler Squad),
New York, December 14, 1906.

Hon. THEODORE A. BINGHAM, Police Commissioner:

Sir—In compliance with orders relative to engineers' certificates issued by me under section 312, of chapter 410 of the Laws of 1882 as amended, the following report will show the names of the persons to whom the licenses were issued, class of license and location of same issued during the twenty-four hours ending 12 midnight, December 13, 1906.

George E. Oates (first class), No. 808 Greenwich street.
Adam Bender (first class), No. 150 Chambers street.
Robert White (first class), No. 509 Greenwich street.
Charles Miller (first class), No. 16 Concord street, Brooklyn.
William Guthrie (first class), No. 254 Lee avenue, Brooklyn.
John R. Grant (second class), foot of West Fifty-seventh street.
Henry Westphal (second class), No. 548 West Twenty-fifth street.
John Grehart (second class), Nos. 1 and 3 West Ninety-sixth street.
Robert Hughes (second class), No. 626 West One Hundred and Thirty-second street.
John Magee (second class), foot of Whitehall street.
August Schubert (second class), foot Washington avenue, Brooklyn.
John Loder (second class), No. 215 Bushwick avenue, Brooklyn.
Fred Kaiser (second class), Nos. 52 to 56 Meserole street, Brooklyn.
Joseph E. Langdon (third class), No. 45 Broadway.
Patrick Connelly (third class), No. 620 West Twenty-fifth street.
David S. Macken (third class), No. 154 Fifth avenue.
John Shaefer (third class), No. 224 Church street.
Edwin Austin (third class), No. 145 West Forty-seventh street.
John Faucett (third class), No. 118 Fulton street.
John Lamport (third class), No. 25 Walker street.
Peter Colgan (third class), No. 365 Broadway.
Clarence V. Graves (third class), No. 328 Rivington street.
John Stone (third class), No. 261 Front street.
Timothy F. Ryan (third class), First avenue and Twenty-seventh street.
Joseph Bader (third class), No. 142 Pearl street.
Joseph Simek (third class), No. 74 East Fourth street.
John J. Cassidy (third class), No. 539 Fifth avenue.
Mattavis Jones (third class), West Brighton, Staten Island.
Thomas H. Preston (third class), No. 228 West Forty-fourth street.
Paul Maass (third class), No. 852 West End avenue.
George C. Marvin (third class), West Brighton, Staten Island.
Martin Melvin (third class), No. 1200 Madison avenue.
Frank H. Langford (third class), New Springville, Staten Island.
John Coyne (third class), No. 263 Fourth avenue.
John Dobbins (third class), Madison avenue and One Hundred and Thirty-eighth street.
George W. Reynolds (third class), No. 155 Greene street.
Ernest McKinley (third class), No. 400 West End avenue.
Clarence E. Conley (third class), No. 210 West Forty-third street.
James Tracy (third class), No. 317 West Fifty-sixth street.
William H. Baker (third class), No. 447 West Fourteenth street.
William F. Buckley (third class), No. 78 Tenth avenue.
William Cabel (third class), No. 345 Bond street, Brooklyn.
John McCauley (third class), No. 340 Adams street, Brooklyn.
John H. Gilson (third class), No. 28 Varet street, Brooklyn.
Albert Henke (third class), foot Blackwell street, Brooklyn.
John Kerr (third class), Fresh Meadow road, Brooklyn.
Jacob Porr (third class), No. 56 Ainslie street, Brooklyn.
Mils Joel Edwards (third class), No. 502 Kent avenue, Brooklyn.
Michael D. O'Connell (third class), Second street and Gowanus canal, Brooklyn.
Thomas J. McDermott (special), No. 173 Franklin street.
Irving Foley (special), No. 355 West Twenty-fifth street.

Respectfully submitted,
HENRY BREEN,
Sergeant in Command, Sanitary Company, Boiler Squad.

CHANGES IN DEPARTMENTS, ETC.

DEPARTMENT OF DOCKS AND FERRIES.

December 21—The Commissioner has transferred Charles T. McCauley from the position of Dock Laborer to that of Foreman Dock Laborer, with compensation at the rate of 50 cents per hour while employed, to take effect Saturday, December 22, 1906.

The Commissioner has transferred Roger T. Harrison from the position of Stationary Engineer in the Department of Parks (New York Aquarium), and has appointed him to the position of Stationary Engineman in this Department with compensation at the rate of 56¼ cents per hour while employed, to take effect December 24, 1906.

December 24—The Commissioner has fixed the salaries of Joel J. Pemoff and William Lansing, Jr., as Assistant Engineers at the rate of $3,500 per annum, to take effect January 1, 1907.

The Commissioner has fixed the salary of William F. Brendlin, Draughtsman, at the rate of $2,100 per annum, to take effect January 1, 1907.

The above are subject to approval by the Municipal Civil Service Commission, if such approval be necessary.

The Commissioner has fixed the wages of George F. Brown, Laborer, at the rate of $18 per week, to take effect Saturday, December 29, 1906.

DEPARTMENT OF BRIDGES.

December 26—Death, on December 15, 1906, of William Ryan, No. 236 West Sixty-seventh street, Manhattan, who was employed as a Laborer.

December 24—Death, on the 15th inst., of Henry Sheehan, No. 2194 Eighth avenue, Manhattan, employed as a Laborer.

TENEMENT HOUSE DEPARTMENT.

December 24—Resigned, George M. Trede, No. 611 West One Hundred and Eighty-seventh street, Inspector of Tenements, salary $1,200 per annum. This resignation to take effect at the close of business on December 15, 1906.

CORPORATION COUNSEL.

December 26—With the approval of the Municipal Civil Service Commission, Miss Mattie E. McCartney, a Telephone Switchboard Operator, at an annual salary of $900, has been transferred to the office of the President of the Borough of Manhattan, and Miss Adelaide Jacobs, a Telephone Switchboard Operator, has also been transferred to the same office and her salary increased to $900 per annum, to take effect at the time of her transfer.

These transfers will take effect at the close of business on December 31, 1906.

COMMISSIONERS OF ACCOUNTS.

December 26—Resigned, at the close of business December 31, 1906, Charles L. O'Reilly, Examining Inspector, at $1,500 per annum.

Appointed, January 1, 1907, Willard Ralph, Examining Inspector, at $1,500 per annum.

EXECUTIVE DEPARTMENT.

Mayor's Office—Bureau of Licenses,
New York, December 26, 1906.

Number of licenses issued and amounts received therefor in the week ending Saturday, December 22, 1906:

BOROUGHS OF MANHATTAN AND THE BRONX.

Date.	No. of Licenses.	Amounts.
Monday, December 17.....	179	$1,347 00
Tuesday, December 18.....	183	906 50
Wednesday, December 19....	164	284 00
Thursday, December 20.....	65	167 00
Friday, December 21.....	95	1,180 75
Saturday, December 22.....	50	171 25
Totals.....	736	$4,056 50

BOROUGH OF BROOKLYN.

Date.	No. of Licenses.	Amounts.
Monday, December 17.....	59	$275 00
Tuesday, December 18.....	31	160 50
Wednesday, December 19....	28	646 00
Thursday, December 20.....	32	178 50
Friday, December 21.....	17	67 50
Saturday, December 22.....	12	56 00
Totals.....	179	$1,383 50

BOROUGH OF QUEENS.

Date.	No. of Licenses.	Amounts.
Monday, December 17.....	..	.....
Tuesday, December 18.....	78	$47 75
Wednesday, December 19....	..	.....
Thursday, December 20.....	12	38 00
Friday, December 21.....	..	.....
Saturday, December 22.....	9	19 50
Totals.....	99	$105 25

BOROUGH OF RICHMOND.

Date.	No. of Licenses.	Amounts.
Monday, December 17.....	..	.....
Tuesday, December 18.....	4	$10 00
Wednesday, December 19....	..	.....
Thursday, December 20.....	2	8 00
Friday, December 21.....	..	.....
Saturday, December 22.....	1	1 50
Totals.....	7	$19 50

JOHN P. CORRIGAN,
Chief of Bureau of Licenses.

BOARD OF ALDERMEN.

Public notice is hereby given that the Committee on Rules of the Board of Aldermen will hold a public hearing in the Aldermanic Chamber in the City Hall in the Borough of Manhattan on Friday, December 28, 1906, on the following enumerated matters:

2 o'clock p. m.—Resolutions (Int. Nos. 158 and 1393) relating to the appointment of special committees to investigate grants, franchises, rights, etc., and the exercise of them by public corporations, etc.

3 o'clock p. m.—Resolution (Int. No. 1411) relating to the appointment of a special committee to investigate the Bureau of Public Incumbrances of the Department of Public Works in relation to the matter of advertising display signs.

All persons interested in the foregoing matters are respectfully invited to attend.

P. J. SCULLY, City Clerk, and
Clerk of the Board of Aldermen.

OFFICIAL DIRECTORY.

CITY OFFICERS.

STATEMENT OF THE HOURS DURING which the Public Offices in the City are open for business and at which the Courts regularly open and adjourn, as well as the places where such offices are kept and such Courts are held, together with the heads of Departments and Courts:

EXECUTIVE DEPARTMENT.

MAYOR'S OFFICE.

No. 5 City Hall, 9 a. m. to 4 p. m.; Saturdays 9 a. m. to 12 m.
Telephone, 8022 Cortlandt.
GEORGE B. McCLELLAN, Mayor.
Frank M. O'Brien, Secretary.
William A. Willis, Executive Secretary.
James A. Rierdon, Chief Clerk and Bond and Warrant Clerk.

BUREAU OF WEIGHTS AND MEASURES.

Room 7, City Hall, 9 a. m. to 4 p. m.; Saturdays 9 to 12 m.
Telephone, 8020 Cortlandt.
Patrick Derry, Chief of Bureau.

BURRAU OF LICENSES.

9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
Telephone, 8020 Cortlandt.
John P. Corrigan, Chief of Bureau.
Principal Office, Room 1, City Hall. Gaetano D'Amato, Deputy Chief, Boroughs of Manhattan and The Bronx.
Branch Office, Room 12, Borough Hall, Brooklyn, Daniel J. Griffin, Deputy Chief, Borough of Brooklyn.
Branch Office, Richmond Building, New Brighton, S. I.; William R. Woelfle, Financial Clerk, Borough of Richmond.
Branch Office, Hackett Building, Long Island City; Charles H. Smith, Financial Clerk, Borough of Queens.

THE CITY RECORD OFFICE.

BUREAU OF PRINTING, STATIONERY AND BLANK BOOKS.

Supervisor's Office, Park Row Building, No. 21 Park Row. Entrance, Room 807, 9 a. m. to 4 p. m. Saturdays, 9 a. m. to 12 m.
Telephone, 1505 and 1506 Cortlandt. Supply Room, No. 2 City Hall.
Patrick J. Tracy, Supervisor; Henry McMillen, Deputy Supervisor; C. McKemie, Secretary.

BOARD OF ALDERMEN.

No. 11 City Hall, 10 a. m. to 4 p. m.; Saturdays, 10 a. m. to 12 m.
Telephone, 7560 Cortlandt.
Patrick F. McGowan, President.
P. J. Scully, City Clerk.

CITY CLERK AND CLERK OF THE BOARD OF ALDERMEN.

City Hall, Rooms 11, 12; 10 a. m. to 4 p. m.; Saturdays, 10 a. m. to 12 m.
Telephone, 7560 Cortlandt.
P. J. Scully, City Clerk and Clerk of the Board of Aldermen.
William J. Boyhan, First Deputy City Clerk.
Michael F. Blake, Chief Clerk of the Board of Aldermen.
Joseph V. Scully, Deputy Chief Clerk, Borough of Brooklyn.
Thomas J. McCabe, Deputy Chief Clerk, Borough of the Bronx.
William R. Zimmerman, Deputy Chief Clerk, Borough of Queens.
Joseph F. O'Grady, Deputy Chief Clerk, Borough of Richmond.

DEPARTMENT OF FINANCE.

Stewart Building, Chambers street and Broadway, 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
Herman A. Metz, Comptroller.
John H. McCooey and N. Taylor Phillips, Deputy Comptrollers.
Hubert L. Smith, Assistant Deputy Comptroller.
Oliver E. Stanton, Secretary to Comptroller.

MAIN DIVISION.

H. J. Storrs, Chief Clerk, Room 11.

BOOKKEEPING AND AWARDS DIVISION.

Frank W. Smith, Chief Accountant and Bookkeeper, Room 8.

STOCK AND BOND DIVISION.

James J. Sullivan, Chief Stock and Bond Clerk, Room 37.

BUREAU OF AUDIT—MAIN DIVISION.

P. H. Quinn, Chief Auditor of Accounts, Room 27.

LAW AND ADJUSTMENT DIVISION.

Jeremiah T. Mahoney, Auditor of Accounts Room 185.

BUREAU OF MUNICIPAL INVESTIGATION AND STATISTICS.

Charles S. Hervey, Supervising Statistician and Examiner, Room 180.

CHARITABLE INSTITUTIONS DIVISION.

Daniel C. Potter, Chief Examiner of Accounts of Institutions, Room 38.

BUREAU OF THE CITY PAYMASTER.

No. 83 Chambers street and No. 65 Reade street.
John H. Timmerman, City Paymaster.

BUREAU OF ENGINEERING.

Stewart Building, Chambers street and Broadway.
Chandler Withington, Chief Engineer, Room 55.

REAL ESTATE BUREAU.

Thomas F. Byrnes, Mortimer J. Brown, Appraisers of Real Estate, Room 157.

BUREAU FOR THE COLLECTION OF TAXES.

Borough of Manhattan—Stewart Building, Room O.
David E. Austen, Receiver of Taxes.
John J. McDonough, Deputy Receiver of Taxes
Borough of The Bronx — Municipal Building, Third and Tremont avenues.
John B. Underhill, Deputy Receiver of Taxes.
Borough of Brooklyn—Municipal Building, Rooms 2-8.
James B. Bouck, Deputy Receiver of Taxes.
Borough of Queens—Hackett Building, Jackson avenue and Fifth street, Long Island City.
Geo. H. Creed, Deputy Receiver of Taxes.
Borough of Richmond—Borough Hall, St. George, New Brighton.
John DeMorgan, Deputy Receiver of Taxes.

BUREAU FOR THE COLLECTION OF ASSESSMENTS AND ARREARS.

Borough of Manhattan—Stewart Building, Room 81.
Edward A. Slattery, Collector of Assessments and Arrears.
John B. Adger Mullally, Deputy Collector of Assessments and Arrears.
Borough of The Bronx — Municipal Building, Rooms 1-3.
James J. Donovan, Jr., Deputy Collector of Assessments and Arrears.
Borough of Brooklyn—Municipal Building.
William E. Melody, Deputy Collector of Assessments and Arrears.
Borough of Queens—Hackett Building, Jackson avenue and Fifth street, Long Island City.
Patrick E. Leahy, Deputy Collector of Assessments and Arrears.
Borough of Richmond—Bay and Sand streets, Stapleton.
George Brand, Deputy Collector of Assessments and Arrears.

BUREAU FOR THE COLLECTION OF CITY REVENUE AND OF MARKETS.

Stewart Building, Chambers street and Broadway, Room 141.
John M. Gray, Collector of City Revenue and Superintendent of Markets.
James H. Baldwin, Deputy Collector of City Revenue.
David O'Brien, Deputy Superintendent of Markets.

BUREAU OF THE CITY CHAMBERLAIN.

Stewart Building, Chambers street and Broadway Rooms 63 to 67.
Patrick Keenan, City Chamberlain.
John H Campbell, Deputy Chamberlain.

COMMISSIONER OF LICENSES.

Office, No. 277 Broadway.
John N. Bogart, Commissioner.
James P. Archibald, Deputy Commissioner.
John J. Caldwell, Secretary.
Office hours, 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
Telephone, 5884 Franklin.

LAW DEPARTMENT.

OFFICE OF CORPORATION COUNSEL.

Hall of Records, Chambers and Centre streets, 6th, 7th and 8th floors, 9 a. m. to 5 p. m.; Saturdays, 9 a. m. to 12 m.
Telephone, 3,900 Worth.
William B. Ellison, Corporation Counsel.
Assistants—Theodore Connoly, Charles D. Olendorf, George L. Sterling, Charles L. Guy, William P. Burr, Edwin J. Freedman, John L. O'Brien, Terence Farley, James T. Malone, Cornelius F. Collins, William J. O'Sullivan, Arthur C. Butts, Charles N. Harris, George S. Coleman, Thomas F. Byrne, Charles A. O'Neil, William Beers Crowell, Arthur Sweeny, John F. O'Brien, John C. Breckenridge, Louis H. Hahlo, Frank B. Pierce, Andrew T. Campbell, Jr., Franklin Chase Hoyt, Alfred W. Booraem, George P. Nicholson, Curtis A. Peters, Thomas F. Noonan, Stephen O'Brien, Charles McIntyre, William H. King, Royal E. T. Riggs, J. Gabriel Britt, Charles W. Miller, William J. Clarke, Lelonce Fuller.
Secretary to the Corporation Counsel—David Ryan.
Borough of Brooklyn Branch Office—James D. Bell, Assistant in charge.
Borough of Queens Branch Office—Edward S. Malone, Assistant in charge.
Borough of The Bronx Branch Office—Richard H. Mitchell, Assistant in charge.
Borough of Richmond Branch Office—John Widdecombe, Assistant in charge.
Andrew T. Campbell, Chief Clerk.

BUREAU OF STREET OPENINGS.

Nos. 90 and 92 West Broadway, 9 a. m. to 5 p. m.; Saturdays, 9 a. m. to 12 m.
John P. Dunn, Assistant in charge.

BUREAU FOR THE RECOVERY OF PENALTIES.

Nos. 119 and 121 Nassau street, 9 a. m. to 5 p. m.; Saturdays, 9 a. m. to 12 m.
Herman Stiefel, Assistant in charge.

BUREAU FOR THE COLLECTION OF ARREARS OF PERSONAL TAXES.

No. 280 Broadway (Stewart Building). Office hours, for the Public, 10 a. m. to 2 p. m.; Saturdays, 10 a. m. to 12 m.
James P. Keenan, Assistant in charge.

TENEMENT HOUSE BUREAU AND BUREAU OF BUILDINGS.

No. 44 East Twenty-third street, 9 a. m. to 5 p. m.; Saturdays, 9 a. m. to 12 m.
John P O'Brien, Assistant in charge.

COMMISSIONERS OF ACCOUNTS.

Rooms 114 and 115 Stewart Building, 9 a. m. to 4 p. m.
Telephone, 4315 Worth.
John C. Hertle, George von Skal, Commissioners.

COMMISSIONERS OF SINKING FUND.

George B. McClellan, Mayor, Chairman; Herman A. Metz, Comptroller; Patrick Keenan, Chamberlain; Patrick F. McGowan, President of the Board of Aldermen, and John R. Davies, Chairman Finance Committee, Board of Aldermen, Members; N. Taylor Phillips, Deputy Comptroller, Secretary.
Office of Secretary, Room 12, Stewart Building.
Telephone, 6120 Franklin.

BOARD OF ESTIMATE AND APPORTIONMENT.

The Mayor, Chairman; the Comptroller, President of the Board of Aldermen, President of the Borough of Manhattan, President of the Borough of Brooklyn, President of the Borough of The Bronx, President of the Borough of Queens, President of the Borough of Richmond.

OFFICE OF THE SECRETARY:

No. 277 Broadway. Room 805. Telephone, 3454 Worth.
Joseph Haag, Secretary. Charles V. Adee, Clerk to Board.

PUBLIC IMPROVEMENTS:

Nelson P. Lewis, Chief Engineer, No. 277 Broadway, Room 801. Telephone, 3457 Worth.

BUREAU OF FRANCHISES:

Harry P. Nichols, Assistant Engineer in charge, Room 79, No. 280 Broadway. Telephone, 6120 Worth.

BOARD OF REVISION OF ASSESSMENTS.

Herman A. Metz, Comptroller.
William B. Ellison, Corporation Counsel.
Lawson Purdy, President of the Department of Taxes and Assessments.
Henry J. Storrs, Chief Clerk, Finance Department, No. 280 Broadway.

AQUEDUCT COMMISSIONERS.

Room 207 Stewart Building, 5th floor, 9 a. m. to 4 p. m.
Telephone, 1042 Franklin.
The Mayor, the Comptroller, *ex-officio*, Commissioners John F. Cowan (President), William H. Ten Eyck, John J. Ryan and John P. Windolph; Harry W. Walker, Secretary; Walter H. Sears, Chief Engineer.

POLICE DEPARTMENT.

CENTRAL OFFICE.

No. 300 Mulberry street, 9 a. m. to 4 p. m.
Telephone, 3100 Spring.
Theodore A. Bingham, Commissioner.
Arthur I. O'Keeffe, First Deputy Commissioner.
Frederick H. Bugher, Second Deputy Commissioner.
William L. Mathot, Third Deputy Commissioner.
Daniel G. Slattery, Secretary.
James L. Mock, Executive Clerk to Commissioner.
William H. Kipp, Chief Clerk.

ARMORY COMMISSIONERS.

The Mayor, George B. McClellan, Chairman; the President of the Department of Taxes and Assessments, Lawson Purdy; the President of the Board of Aldermen, Patrick F. McGowan; Brigadier-General James McLeer and Brigadier-General George Moore Smith Commissioners.
Eugene A. Fornes, Secretary, and Frank J. Bell, Acting Secretary. Room No. 6, Basement, Hall of Records, Chambers and Centre streets.
Office hours, 9 a. m. to 4 p. m.; Saturdays, 9 a. m to 12 m.

BOARD OF ELECTIONS.

Headquarters, General Office, No. 107 West Forty-first street.
Commissioners—John R. Voorhis (President), Charles B. Page (Secretary), John Maguire, Michael J. Dady.
A. C. Allen, Chief Clerk

BOROUGH OFFICES.

Manhattan.

No. 112 West Forty-second street.
William C. Baxter, Chief Clerk.

The Bronx.

One Hundred and Thirty-eighth street and Mott avenue (Solingen Building).
Cornelius A. Bunner, Chief Clerk.

Brooklyn.

No. 42 Court street (Temple Bar Building)
George Russell, Chief Clerk.

Queens.

No. 51 Jackson avenue, Long Island City.
Carl Voegel, Chief Clerk.

Richmond.

Staten Island Savings Bank Building, Beach and Water streets, Stapleton, S. I.
Alexander M. Ross, Chief Clerk.
All offices open from 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.

DEPARTMENT OF BRIDGES.

Nos. 13-21 Park row.
James W. Stevenson, Commissioner.
John H. Little, Deputy Commissioner.
Edgar E. Schiff, Secretary.
Office hours, 9 a. m. to 4 p. m.
Saturdays, 9 a. m. to 12 m.
Telephone, 6080 Cortlandt.

DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY.

Nos. 13 to 21 Park row, 9 a. m. to 4 p. m.
Telephones, Manhattan, 8520 Cortlandt; Brooklyn, 3080 Main; Queens, 430 Greenpoint; Richmond, 94 Tompkinsville; Bronx, 62 Tremont.
John H. O'Brien, Commissioner.
Frank J. Goodwin, Deputy Commissioner.
I. M. de Verona, Chief Engineer.
George W. Birdsall, Consulting Hydraulic Engineer.
George F. Sever, Consulting Electrical Engineer.
Charles F. Lacombe, Chief Engineer of Light and Power.
Michael C. Padden, Water Register, Manhattan.
Joseph F. Prendergast, Secretary to the Department.
William A. Hawley, Secretary to Commissioner.
William C. Cozier, Deputy Commissioner, Borough of Brooklyn, Municipal Building, Brooklyn.
William R. McGuire, Water Register, Brooklyn.
Thomas H. O'Neil, Deputy Commissioner, Borough of The Bronx, Crotona Park Building, One Hundred and Seventy-seventh street and Third avenue.
Thomas M. Lynch, Water Register, The Bronx.
Charles C. Wissel, Deputy Commissioner, Borough of Queens, Hackett Building, Long Island City.
Edward I. Miller, Deputy Commissioner, Borough of Richmond, Richmond Building, New Brighton, S. I.

FIRE DEPARTMENT.

Office hours for all, except where otherwise noted from 9 a. m. to 4 p. m.; Saturdays, 12 m.

HEADQUARTERS.

Nos. 157 and 159 East Sixty-seventh street, Manhattan.
Telephone, 2230 Plaza, Manhattan; 2356 Main, Brooklyn.
Francis J. Lantry, Commissioner.
Hugh Bonner, Deputy Commissioner.
Charles C. Wise, Deputy Commissioner, Boroughs of Brooklyn and Queens.
Alfred M. Downes, Secretary; Michael J. Healion, Secretary to the Commissioner; George F. Dobson, Jr., Secretary to the Deputy Commissioner, Boroughs of Brooklyn and Queens.
Edward F. Croker, Chief of Department.
Thomas Lally, Deputy Chief of Department in charge, Boroughs of Brooklyn and Queens.
Franz S. Wolf, Oil Surveyor, temporarily in charge of Bureau of Combustibles, Nos. 157 and 159 East Sixty-seventh street, Manhattan.
William A. Hervey, Assistant Inspector of Combustibles, Boroughs of Brooklyn and Queens, Nos. 365 and 367 Jay street, Brooklyn.
Peter Seery, Fire Marshal, Boroughs of Manhattan, The Bronx and Richmond.
William L. Beers, Fire Marshal, Boroughs of Brooklyn and Queens.
Andrew P. Martin, Inspector in charge of Fire Alarm Telegraph Bureau.
William T. Beggin, Chief of Battalion in charge Bureau of Violations and Auxiliary Fire Appliances, Boroughs of Manhattan, The Bronx and Richmond, Nos. 157 and 159 East Sixty-seventh street, Manhattan. Brooklyn and Queens, Nos. 365 and 367 Jay street, Brooklyn.
Central Office open at all hours.

MUNICIPAL EXPLOSIVES COMMISSION.

Nos. 157 and 159 East Sixty-seventh street, Headquarters Fire Department.
Francis J. Lantry, Fire Commissioner and Chairman; William Montgomery, John Sherry, C. Andrade, Jr., Abram A. Breneman.
Franz S. Wolf, Secretary, No. 157 East Sixty-seventh street.

DEPARTMENT OF CORRECTION.

CENTRAL OFFICE.

No. 148 East Twentieth street. Office hours from 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
Telephone, 1047 Gramercy.
John V. Coggey, Commissioner.
George W. Meyer, Jr., Deputy Commissioner.
John B. Fitzgerald, Secretary.

DEPARTMENT OF STREET CLEANING.

Nos. 13 to 21 Park row, 9 a. m. to 4 p. m.
Telephone, 3863 Cortlandt.
Macdonough Craven, Commissioner.
Jerome Reilly, Deputy Commissioner.
John J. O'Brien, Chief Clerk.

DEPARTMENT OF PUBLIC CHARITIES

CENTRAL OFFICE.

Foot of East Twenty-sixth street, 9 a. m. to 4 p. m. Saturdays, 12 m.
Telephone, 3350 Madison Square.
Robert W. Hebberd, Commissioner
Richard C. Baker, First Deputy Commissioner.
James J. McInerney, Second Deputy Commissioner for Brooklyn and Queens, Nos. 327 to 331 Schermerhorn street, Brooklyn.
Thomas Kenny, Sr., Superintendent for Richmond Borough, Borough Hall, St. George, Staten Island.
Plans and Specifications, Contracts, Proposals and Estimates for Work and Materials for Building, Repairs and Supplies, Bills and Accounts, 9 a. m. to 4 p. m. Saturdays, 12 m.
Bureau of Dependent Adults, foot of East Twenty-sixth street. Office hours, 8.30 a. m. to 4 p. m.
The Children's Bureau, No. 66 Third avenue. Office hours, 8.30 a. m. to 4 p. m.

TENEMENT HOUSE DEPARTMENT.

Manhattan Office, No. 44 East Twenty-third street.
Telephone, 5331 Gramercy.
Edmond J. Butler, Commissioner.
Harry G. Darwin, First Deputy Commissioner.
Brooklyn Office, Temple Bar Building, No. 44 Court street.
Telephone, 3825 Main.
John McKeown, Second Deputy Commissioner.
Bronx Office, Nos. 2804, 2806 and 2808 Third avenue.
Telephone, 967 Melrose.
William B. Calvert, Superintendent.

DEPARTMENT OF DOCKS AND FERRIES.

Pier "A," N. R., Battery place.
Telephone, 300 Rector.
John A. Bensel, Commissioner.
Denis A. Judge, Deputy Commissioner.
Joseph W. Savage, Secretary.
Office hours, 9 a. m. to 4 p. m.; Saturdays, 12 m.

BELLEVUE AND ALLIED HOSPITALS.

Telephone, 4400 Madison Square.
Board of Trustees—Dr. John W. Brannan, President; James K. Paulding, Secretary; Leopold Stern, Theodore E. Tack, Arden M. Robbins, Myles Tierney, Samuel Sachs, Robert W. Hebberd, ex-officio.

DEPARTMENT OF HEALTH.

Southwest corner of Fifty-fifth street and Sixth avenue, Borough of Manhattan, 9 a. m. to 4 p. m.
Burial Permit and Contagious Disease Offices always open.
Telephone, 4900 Columbus.
Thomas Darlington, M. D., Commissioner of Health and President.
Alvah H. Doty, M. D., Theodore A. Bingham, Commissioners.
Eugene W. Scheffer, Secretary.
Herman M. Biggs, M. D., General Medical Officer.
James McC. Miller, Chief Clerk.
Charles F. Roberts, M. D., Sanitary Superintendent.
William H. Guilfoy, M. D., Registrar of Records Borough of Manhattan.

Walter Bensel, M. D., Assistant Sanitary Superintendent, George A. Roberts, Assistant Chief Clerk, Charles J. Burke, M. D., Assistant Registrar of Records.

Borough of The Bronx, No. 3731 Third Avenue.

Charles F. Spencer, M. D., Acting Assistant Sanitary Superintendent; Ambrose Lee, Jr., Assistant Chief Clerk; Arthur J. O'Leary, M. D., Assistant Registrar of Records.

Borough of Brooklyn, Nos. 38 and 40 Clinton street.

Traverse R. Maxfield, M. D., Assistant Sanitary Superintendent; Alfred T. Metcalfe, Assistant Chief Clerk; S. J. Byrne, M. D., Assistant Registrar of Records.

Borough of Queens, Nos. 372 and 374 Fulton street, Jamaica.

John P. Moore, M. D., Assistant Sanitary Superintendent; George R. Crowly, Assistant Chief Clerk, Robert Campbell, M. D., Assistant Registrar of Records.

Borough of Richmond, Nos. 54 and 56 Water street, Stapleton, Staten Island.

John T. Sprague, M. D., Assistant Sanitary Superintendent; Charles E. Hoyer, Assistant Chief Clerk; J. Walter Wood, M. D., Assistant Registrar of Records.

DEPARTMENT OF PARKS.

Moses Herrman, Commissioner of Parks for the Boroughs of Manhattan and Richmond, and President Park Board.
M. F. Loughman, Secretary.
Offices, Arsenal, Central Park.
Michael J. Kennedy, Commissioner of Parks for the Boroughs of Brooklyn and Queens.
Offices, Litchfield Mansion, Prospect Park, Brooklyn.
Joseph I. Berry, Commissioner of Parks for the Borough of The Bronx.
Offices, Zbrowski Mansion, Claremont Park.
Office hours, 9 a. m. to 4 p. m.; Saturdays, 12 m.

DEPARTMENT OF TAXES AND ASSESSMENTS.

Hall of Records, corner of Chambers and Centre streets. Office hours, 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
Commissioners Lawson Purdy, President. John J. Brady, Frank Raymond, Nicholas Muller, James H. Tully, Charles Putzel, Thomas L. Hamilton.

MUNICIPAL CIVIL SERVICE COMMISSION.

No. 299 Broadway, 9 a. m. to 4 p. m.
William F. Baker, R. Ross Appleton, Alfred J. Talley.
Frank A. Spencer, Secretary.

Labor Bureau.

No. 51 Lafayette street (old No. 61 Elm street).

BOARD OF ASSESSORS.

Office, No. 320 Broadway, 9 a. m. to 4 p. m.; Saturdays, 12 m.
Antonio Zucca.
Paul Weimann.
James H. Kennedy.
William H. Jasper, Secretary.

DEPARTMENT OF EDUCATION.

BOARD OF EDUCATION.

Park avenue and Fifty-ninth street, Borough of Manhattan, 9 a. m to 5 p. m. (in the month of August, 9 a. m. to 4 p. m.) Saturdays, 9 a.m. to 12 m
Telephone, 1180 Plaza.
Richard H. Adams, Richard B. Aldcroftt, Jr.; Frank L. Babbott, Grosvenor H. Backus, Nicholas J. Barrett, John J. Barry, Joseph E. Cosgrove, Francis P. Cunnion, Thomas M. DeLaney, Samuel M. Dix, Samuel B. Donnelly, A. Leo Everett, Joseph Nicola Francolini, George Freifeld, John Greene, George J. Gillespie, Randolph Guggenheimer, George D. Hamlin, M. D.; Robert L. Harrison, Louis Haupt, M. D.; Thomas J. Higgins, Charles H. Ingalls, Nathan S. Jonas, Hugo Kanzler, John C. Kelley, Alrick H. Man, Clement March, Mitchell May, Dennis J. McDonald, M. D.; Thomas J. O'Donohue, Frank H. Partridge, George E. Payne, Frank Lyon Polk, James A. Renwick, George W Schaedle, Henry H. Sherman, Abraham Stern M. Samuel Stern, Cornelius J. Sullivan, John R Thompson, George A. Vandenhoff, John A. Wilbur, William N Wilmer, Frank D. Wilsey, George W. Wingate, Egerton L. Winthrop, Jr., members of the Board.
Egerton L. Winthrop, Jr., President.
John Greene, Vice-President.
A. Emerson Palmer, Secretary.
Fred H. Johnson, Assistant Secretary.
C. B. J. Snyder, Superintendent of School Buildings.
Patrick Jones, Superintendent of School Supplies.
Henry R. M. Cook, Auditor
Thomas A. Dillon, Chief Clerk.
Henry M. Leipziger, Supervisor of Lectures.
Claude G. Leland, Superintendent of Libraries.
Henry M. Devoe, Supervisor of Janitors.

BOARD OF SUPERINTENDENTS.

William H. Maxwell, City Superintendent of Schools, and George S. Davis, Andrew W. Edson, Clarence E. Meleney, Thomas S. O'Brien, Edward B. Shallow, Edward L. Stevens, Gustave Straubenmüller, John H. Walsh, Associate City Superintendents.

DISTRICT SUPERINTENDENTS.

Darwin L. Bardwell, William A. Campbell, John J. Chickering, John W. Davis, John Dwyer, James M. Edsall, Matthew J. Elgas, Edward D. Farrell, Cornelius D Franklin, John Griffin, M. D.; John H. Haaren, John L. N. Hunt, Henry W. Jameson, James Lee, Charles W. Lyon, James J. McCabe, William J. O'Shea, Julia Richman, Alfred T. Schauffler, Albert Shiels, Edgar Dubs Shimer, Seth T. Stewart, Edward W. Stitt, Grace C. Strachan, Joseph S. Taylor, Evangeline E. Whitney.

BOARD OF EXAMINERS.

William H. Maxwell, City Superintendent of Schools, and James C. Byrnes, Walter L. Hervey, Jerome A. O'Connell, George J. Smith, Examiners.

ART COMMISSION.

City Hall, Room 21.
Telephone call, 1197 Cortlandt.
Robert W. de Forest, President; A. Augustus Healy, President of the Brooklyn Institute of Arts and Sciences Vice-President; Howard Mansfield, Secretary; George B. McClellan, Mayor of The City of New York; J. Pierpont Morgan, President of Metropolitan Museum of Art; John Bigelow, President of New York Public Library; J. Carroll Beckwith, Painter; John J. Boyle, Sculptor; Walter Cook, Architect; John D. Crimmins.
Milo R. Maltbie, Assistant Secretary.

BOARD OF EXAMINERS.

Rooms 6027 and 6028 Metropolitan Building, No. 1 Madison avenue, Borough of Manhattan, 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
Telephone, 5840 Gramercy.
Warren A. Conover, Charles Buek, Lewis Harding, Charles G. Smith, Edward F. Croker, Henry R. Marshall and William J. Fryer, Chairman.
Edward V. Barton, Clerk
Board meeting every Tuesday at 2 p. m.

EXAMINING BOARD OF PLUMBERS.

Robert McCabe, President; David Jones, Secretary; Thomas E. O'Brien, Treasurer; ex-officio Horace Loomis and Matthew E. Healy.
Rooms 14, 15 and 16 Aldrich Building, Nos. 149 and 151 Church street.
Office open during business hours every day in the year except legal holidays. Examinations are held on Monday, Wednesday and Friday after 1 p. m.

BOARD OF RAPID TRANSIT RAILROAD COMMISSIONERS.

Board of Rapid Transit Railroad Commissioners No. 320 Broadway, New York.
Bion L. Burrows, Secretary.

NEW YORK CITY IMPROVEMENT COMMISSION.

Nos. 13-21 Park row.
Francis K. Pendleton, Chairman; Jacob S. Cantor, George A. Hearn, Whitney Warren, Harry Payne Whitney, Frank Bailey, John W. Alexander, Daniel C. French, Louis F. Haffen, James A. Wright, Joseph Cassidy, William J. La Roche, J. Edward Swanstrom, George Cromwell and Henry S. Thompson.
Advisory Committee—Nelson P. Lewis, Chief Engineer, Board of Estimate and Apportionment, Secretary to the Commission; John A. Bensel, Commissioner, Department of Docks and Ferries; O. F. Nichols, Chief Engineer, Bridge Department; Samuel Parsons, Jr., Landscape Architect, Park Department.
Nathaniel Rosenberg, Assistant Secretary.

BOARD OF WATER SUPPLY.

Office, No. 299 Broadway.
J. Edward Simmons, Charles N. Chadwick, Charles A. Shaw, Commissioners.
Thomas Hassett, Secretary.
J. Waldo Smith, Chief Engineer.

CHANGE OF GRADE DAMAGE COMMISSION.

TWENTY-THIRD AND TWENTY-FOURTH WARDS.

Office of the Commission, Room 138, No. 280 Broadway (Stewart Building), Borough of Manhattan, New York City.
Commissioners—William E. Stillings, George C. Norton, Oscar S. Bailey.
Lamont McLoughlin, Clerk.
Regular advertised meetings on Monday, Wednesday and Friday of each week at 2 o'clock p. m.

METROPOLITAN SEWERAGE COMMISSION.

Office, No. 17 Battery Place. Daniel Lewis, President, Olin H. Landreth, George A. Soper, Andrew J. Provost, Jr., Secretary, James H. Fuertes, Commissioners.

BOROUGH OFFICES.

Borough of Manhattan.

Office of the President, Nos. 10, 11 and 12 City Hall, 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
John F. Ahearn, President.
Bernard Downing, Secretary.
Edward S. Murphy, Superintendent of Buildings
William Dalton, Commissioner of Public Works.
James J. Hagan, Assistant Commissioner of Public Works
William H Walker, Superintendent of Public Buildings and Offices.
George F. Scannell, Superintendent of Highways

Borough of The Bronx.

Office of the President, corner Third Avenue and One Hundred and Seventy-seventh street; 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
Louis F. Haffen, President.
Henry A. Gumbleton, Secretary.
John F. Murray, Commissioner of Public Works.
Josiah A. Briggs, Chief Engineer.
Frederick Greiffenberg, Principal Assistant Topographical Engineer.
Charles H. Graham, Engineer of Sewers.
Samuel C. Thompson, Engineer of Highways.
Patrick J. Reville, Superintendent of Buildings
Assistant Commissioner of Public Works, Peter J. Stumpf.
Martin Geiszler, Superintendent of Highways.

Borough of Brooklyn.

President's Office, Nos. 15 and 16 Borough Hall 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
Bird S. Coler, President.
Charles Frederick Adams, Secretary.
John A. Heffernan, Private Secretary.
Desmond Dunne, Commissioner of Public Works.
Durbin Van Vleck, Assistant Commissioner of Public Works.
David F. Moore, Superintendent of Buildings.
Frank J. Ulrich, Superintendent of the Bureau of Highways.
James Dunne Superintendent of the Bureau of Sewers.
Joseph M. Lawrence, Superintendent of the Bureau of Public Buildings and Offices.

Borough of Queens.

President's Office, Borough Hall, Jackson avenue and Fifth street, Long Island City; 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
Joseph Bermel, President.
Herman Ringe, Secretary.
Lawrence Gresser. Commissioner of Public Works.
Alfred Denton, Assistant Commissioner of Public Works
James P. Hicks, Superintendent of Highways.
Carl Berger, Superintendent of Buildings
Joseph H. De Bragga, Superintendent of Sewers.
Lucien Knapp, Superintendent of Street Cleaning Office, No. 48 Jackson avenue, Long Island City.
Henry Willet, Superintendent of Public Buildings and Offices. Office, Town Hall, Jamaica.
Robert R. Crowell, Engineer Topographical Bureau. Office, No. 252 Jackson avenue, Long Island City.

Borough of Richmond.

President's Office, New Brighton, Staten Island.
George Cromwell, President.
Maybury Fleming, Secretary
Louis Lincoln Tribus, Consulting Engineer and Acting Commissioner of Public Works.
John Seaton, Superintendent of Buildings.
H. E. Buel, Superintendent of Highways.
John T. Fetherston, Superintendent of Street Cleaning.
Ernest H. Seehusen, Superintendent of Sewers.
John Timlin, Jr., Superintendent of Public Buildings and Offices.
George W. Tuttle, Principal Assistant Engineer, Bureau of Engineering—Topographical.
Theodor S. Oxholm, Principal Assistant Engineer, Bureau of Engineering—Construction.
Offices—Borough Hall, New Brighton, N. Y., 9 a. m. to 4 p. m. Saturdays, 9 a. m. to 12 m.

CORONERS.

Borough of Manhattan—Office, Criminal Courts Building, Centre and White streets. Open at all times of the day and night.
Coroners: Julius Harburger, Peter P. Acritelli George F. Shrady, Jr., Peter Dooley.
Julius Harburger, President, Board of Coroners.
Jacob E. Bausch, Chief Clerk.
Borough of The Bronx—Corner of Third avenue and One Hundred and Seventy-seventh street. Telephone, 1250 Tremont and 3415 Harlem.
Robert F. McDonald, A. F. Schwannecke.
William T. Austin, Chief Clerk.
Borough of Brooklyn—Office, Room 11, Borough Hall. Telephone, 4004 Main and 4005 Main.
Henry J. Brewer, M. D., John F. Kennedy.
Joseph McGuinness, Chief Clerk.
Open all hours of the day and night.
Borough of Queens—Office, Borough Hall, Fulton street, Jamaica, L. I.
Samuel D. Nutt, Alfred S. Ambler.
Martin Mager, Jr., Chief Clerk.
Office hours, from 9 a. m. to 10 p. m.
Borough of Richmond—Second street, New Brighton. Open for the transaction of business all hours of the day and night.
Matthew J. Cahill.

NEW YORK COUNTY.

SURROGATE.

New County Court-house. Court open from 9 a. m. to 4 p. m., except Saturday, when it closes at 12 m. During the months of July and August the hours are from 9 a. m. to 2 p. m.
Frank T. Fitzgerald, Abner C. Thomas, Surrogates; William V. Leary, Chief Clerk.

SHERIFF.

No. 299 Broadway, 9 a. m. to 4 p. m.; Saturdays 9 a. m. to 12 m.
Nicholas J. Hayes, Sheriff.
A. J. Johnson, Under Sheriff.

DISTRICT ATTORNEY.

Building for Criminal Courts, Franklin and Centre streets.
Office hours from 9 a. m. to 5 p. m.; Saturdays 9 a. m. to 12 m.
William Travers Jerome, District Attorney.
John A. Henneberry, Chief Clerk.

REGISTER.

Hall of Records. Office hours from 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m. During the months of July and August the hours are from 9 a. m. to 2 p. m.
Frank Gass, Register.
William H. Sinnott, Deputy Register.

COUNTY CLERK.

Nos. 8, 9, 10 and 11 New County Court-house. Office hours from 9 a. m. to 4 p. m.
Peter J. Dooling, County Clerk.
John F. Curry, Deputy.
Joseph J. Glennen, Secretary.

COMMISSIONER OF JURORS.

Room 127, Stewart Building, Chambers street and Broadway, 9 a. m. to 4 p. m.
Thomas Allison, Commissioner.
Matthew F. Neville, Assistant Commissioner.
Frederick P. Simpson, Assistant Commissioner.
Frederick O'Byrne, Secretary.

PUBLIC ADMINISTRATOR.

No. 119 Nassau street, 9 a. m. to 4 p. m.
William M. Hoes, Public Administrator.

COMMISSIONER OF RECORDS.

Office, New County Court-house.
William S. Andrews, Commissioner.

KINGS COUNTY.

COUNTY COURT, KINGS COUNTY.

County Court-house, Brooklyn, Rooms 10, 19, 20, 22 and 23. Court opens at 10 a. m. daily and sits until business is completed. Part I., Room No. 23; Part II., Room No. 10. Court-house. Clerk's Office, Rooms 19, 20 and 22, open daily from 9 a. m. to 4 p. m.; Saturdays, 12 m.
Joseph Aspinall and Frederick E. Crane, County Judges.
Charles S. Devoy, Chief Clerk.

SURROGATE.

Hall of Records, Brooklyn, N. Y.
James C. Church, Surrogate.
William P. Pickett, Clerk of the Surrogate's Court.
Court opens at 10 a. m. Office hours, 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.

SHERIFF.

County Court-house, Brooklyn, N. Y.
9 a. m. to 4 p. m.; Saturdays, 12 m.
Michael J. Flaherty, Sheriff.

DISTRICT ATTORNEY.

Office, County Court-house, Borough of Brooklyn Hours, 9 a. m. to 5 p. m.
John F. Clarke, District Attorney.

REGISTER.

Hall of Records. Office hours, 9 a. m. to 4 p. m., excepting months of July and August; then from 9 a. m. to 2 p. m., provided for by statute.
Alfred J. Boulton, Register.

COUNTY CLERK.

Hall of Records, Brooklyn. Office hours, 9 a. m. to 4 p. m.; during months of July and August, 9 a. m. to 2 p. m.; Saturdays, 9 a. m. to 12 m.
Charles T. Hartzheim, County Clerk.
Bela Tokaji, Deputy County Clerk.
James P. Kohler, Assistant Deputy County Clerk.
Robert Stewart, Counsel.
Telephone call, 4930 Main.

COMMISSIONER OF JURORS.

5 County Court-house.
Jacob Brenner, Commissioner.
Jacob A. Livingston, Deputy Commissioner.
Albert B. Waldron, Secretary.
Office hours from 9 a. m. to 4 p. m.; Saturdays, from 9 a. m. to 12 m.
Office hours during July and August, 9 a. m. to 2 p. m.; Saturdays from 9 a. m. to 12 m.

COMMISSIONER OF RECORDS.

Hall of Records.
Office hours, 9 a. m. to 4 p. m., excepting months of July and August, then 9 a. m. to 2 p. m.; Saturdays, 9 a. m. to 12 m.
John K. Neal, Commissioner.
D. H. Ralston, Deputy Commissioner.
Thomas D. Mosscrop, Superintendent.
William J. Beattie, Assistant Superintendent.

PUBLIC ADMINISTRATOR.

No. 26 Court street (Garfield Building), Brooklyn, 9 a. m. to 4 p. m.
Charles E. Teale, Public Administrator.

QUEENS COUNTY.

SURROGATE.

Daniel Noble, Surrogate.
Office at Jamaica.
Except on Sundays, holidays and half-holidays, the office is open between March 31 and October 1 from 8 a. m. to 5 p. m.; on Saturdays from 8 a. m. to 12 m.; between September 30 and April 1, from 9 a. m. to 5 p. m.; on Saturdays, from 9 a. m. to 12 m.
The calendar is called on Tuesday of each week at 10 a. m., except during the month of August, when no court is held, and the court sits every day thereafter until all contested cases have been disposed of.

COUNTY COURT.

Temporary County Court-house, Long Island City.
County Court opens at 10 a. m. Trial Terms begin first Monday of each month, except July, August and September. Special Terms each Saturday, except during August.
County Judge's office always open at No. 336 Fulton street, Jamaica, N. Y.
Burt J. Humphrey, County Judge.

SHERIFF.

County Court-house, Long Island City, 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m.
Joseph Meyerrose, Sheriff.
Henry W. Sharkey, Under Sheriff.
William Repper, Chief Deputy.

DISTRICT ATTORNEY.

Office, Queens County Court-house, Long Island City, 9 a. m. to 5 p. m.
Ira G. Darrin, District Attorney.

COUNTY CLERK.

Jamaica, N. Y.; Fourth Ward, Borough of Queens.
Office hours, April 1 to October 1, 8 a. m. to 5 p. m.; October 1 to April 1, 9 a. m. to 5 p. m.; Saturdays to 12 m
David L. Van Nostrand, County Clerk.
Charles Downing, Deputy County Clerk.

COMMISSIONER OF JURORS.

Office hours, 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m. Queens County Court House, Long Island City.
John P. Balbert, Commissioner of Jurors.
Rodman Richardson, Assistant Commissioner.

PUBLIC ADMINISTRATOR.

Nos. 62 to 68 Jackson avenue, Long Island City.
Charles J. Schneller, Public Administrator, County of Queens.

RICHMOND COUNTY.

COUNTY JUDGE AND SURROGATE.

Terms of Court, Richmond County, 1906.
County Courts—Stephen D. Stephens, County Judge.
First Monday of June, Grand and Trial Jury.
First Monday of December, Grand and Trial Jury.
Fourth Wednesday of January, without a Jury.
Fourth Wednesday of February, without a Jury.
Fourth Wednesday of March, without a Jury.
Fourth Wednesday of April, without a Jury.
Fourth Wednesday of July, without a Jury.
Fourth Wednesday of September, without a Jury.
Fourth Wednesday of October, without a Jury.
—All at the Court-house at Richmond.
Surrogate's Court—Stephen D. Stephens, Surrogate.
Mondays at the Corn Exchange Bank Building, St. George, 10.30 o'clock.
Tuesdays at the Corn Exchange Bank Building, St. George, at 10.30 o'clock a. m.
Wednesdays at the Surrogate's Office, Richmond, at 10.30 o'clock a. m.

DISTRICT ATTORNEY.

No. 400 Richmond Terrace, New Brighton, S. I.
Office hours from 9 a. m. to 12 m., and 1 p. m. to 5 p. m.
John J. Kenney, District Attorney.

COUNTY CLERK.

County Office Building, Richmond, S. I., 9 a. m. to 4 p. m.
C. L. Bostwick, County Clerk.
County Court-house, Richmond, S. I., 9 a. m to 4 p. m.

SHERIFF.

County Court-house, Richmond, S. I
Office hours, 9 a. m. to 4 p. m.
Charles J. McCormack, Sheriff.
Thomas H Banning, Under Sheriff.

COMMISSIONER OF JURORS.

Village Hall, Stapleton.
Charles J. Kullman, Commissioner.
John J. McCaughey, Assistant Commissioner.
Office open from 9 a. m. until 4 p. m.; Saturdays from 9 a. m. to 12 m.

THE COURTS.

APPELLATE DIVISION OF THE SUPREME COURT.

FIRST JUDICIAL DEPARTMENT.

Court-house, Madison avenue, corner Twenty-fifth street. Court opens at 1 p. m.
Edward Patterson, Presiding Justice, George L. Ingraham, Chester B. McLaughlin, Frank C. Laughlin, John Proctor Clarke, James W. Houghton, Francis M. Scott, Justices; Alfred Wagstaff, Clerk; William Lamb, Deputy Clerk.
Clerk's office open at 9 a. m.

SUPREME COURT—FIRST DEPARTMENT.

County Court-house, Chambers street. Court open rom 10.15 a. m. to 4 p. m.
Special Term, Part I. (motions), Room No. 16.
Special Term, Part II. (ex-parte business), Room No. 13.
Special Term, Part III., Room No. 19.
Special Term, Part IV., Room No. 20.
Special Term, Part V., Room No. 33.
Special Term, Part VI. (Elevated Railroad cases,) Room 31.
Trial Term, Part II., Room No. 34.
Trial Term, Part III., Room No. 22.
Trial Term, Part IV., Room No. 21.
Trial Term, Part V., Room No. 24.
Trial Term, Part VI., Room No. 35.
Trial Term, Part VII., Room No. 23.
Trial Term, Part VIII., Room No. 27
Trial Term, Part IX., Room No. 26.
Trial Term, Part X., Room No. 28.
Trial Term, Part XI., Room No. 37.
Trial Term, Part XII., Room No. 26.
Trial Term, Part XIII., and Special Term, Part VII., Room No. 36.
Appellate Term, Room No. 29.
Naturalization Bureau, Room No. 38, third floor.
Assignment Bureau, room on third floor.
Clerks in attendance from 10 a. m. to 4 p. m.
Clerk's Office, Special Term, Part I. (motions) Room No. 15.
Clerk's Office, Special Term, Part II. (ex-parte business), room southwest corner mezzanine floor.
Clerk's Office, Special Term, Calendar, room southeast corner, second floor.
Clerk's Office, Trial Term, Calendar, room north east corner, second floor, east.
Clerk's Office, Appellate Term, room southwest corner, third floor.
Trial Term, Part I. (criminal business).
Criminal Court-house, Centre street.
Justices—Charles H. Truax, Charles F. McLean, Henry Bischoff, Jr., Leonard A. Giegerich, P. Henry Dugro, Henry A. Gildersleeve, James Fitzgerald, David Leventritt, James A. O'Gorman, James A. Blanchard, Edward S. Clinch, Samuel Greenbaum, Edward E. McCall, Edward B. Amend. Vernon M. Davis Victor J. Dowling, Joseph Newburger, M. Linn Bruce

SUPREME COURT—SECOND DEPARTMENT.

Kings County Court-house, Borough of Brooklyn, N. Y.
Court open daily from 10 o'clock a. m. to 5 o'clock p. m. Six jury trial parts. Special Term for Trials Special Term for Motions.
James F. McGee, General Clerk.

CRIMINAL DIVISION—SUPREME COURT.

Building for Criminal Courts, Centre, Elm, White and Franklin streets.
Court opens at 10.30 a. m.
Peter J. Dooling, Clerk; Edward R. Carroll, Special Deputy to the Clerk.
Clerk's Office open from 9 a. m. to 4 p. m.

COURT OF GENERAL SESSIONS.

Held in the building for Criminal Courts, Centre Elm, White and Franklin streets.
Court opens at 10.30 a. m.
Rufus B. Cowing, City Judge; John W. Goff, Recorder; Otto A. Rosalsky, Warren W. Foster and Thomas C. O'Sullivan, Judges of the Court of General Sessions. Edward R. Carroll, Clerk.
Clerk's Office open from 9 a. m. to 4 p. m.
During July and August will close at 2 p. m., and on Saturdays at 12 m.

CITY COURT OF THE CITY OF NEW YORK.

No. 32 Chambers street, Brownstone Building, City Hall Park, from 10 a. m. to 4 p. m.
Part I.
Part II.
Part III.
Part IV.
Part V.
Special Term Chambers will be held from 10 a. m to 4 p. m.
Clerk's Office open from 9 a. m. to 4 p. m.
Edward F. O'Dwyer, Chief Justice; John Henry McCarty, Lewis J. Conlan, Theodore F. Hascall, Francis B. Delehanty, Samuel Seabury, Joseph I. Green, Justices. Thomas F. Smith, Clerk.

COURT OF SPECIAL SESSIONS.

Building for Criminal Courts, Centre street between Franklin and White streets, Borough of Manhattan.
Court opens at 10 a. m.
Justices—First Division—John B. McKean, William E. Wyatt, Willard H. Olmstead, Joseph M. Deuel, Lorenz Zeller, Francis S. McAvoy. Charles W. Culkin, Clerk; William M. Fuller, Deputy Clerk
Clerk's Office open from 9 a. m. to 4 p. m.
Second Division—Trial Days—No. 171 Atlantic avenue, Brooklyn, Mondays, Wednesdays and Fridays at 10 o'clock; Town Hall, Jamaica, Borough of Queens, Tuesday at 10 o'clock; Town Hall, New Brighton Borough of Richmond, Thursday at 10 o'clock.
Justices—Howard J. Forker, Patrick Keady, John Fleming, Thomas W. Fitzgerald, Robert J. Wilkin, George J. O'Keefe; Joseph L. Kerrigan, Clerk; John J. Dorman, Deputy Clerk.
Clerk's Office, No. 171 Atlantic avenue, Borough of Brooklyn, open from 9 a. m. to 4 p. m.

CHILDREN'S COURT.

First Division—No. 66 Third avenue, Manhattan Edmund C. Lee, Clerk.
Second Division—No. 102 Court street, Brooklyn, James P. Sinnott, Clerk.

CITY MAGISTRATES' COURT.

Courts open from 9 a. m. to 4 p. m.
City Magistrates—Robert C. Cornell, Leroy B. Crane, John B. Mayo, Peter T. Barlow, Matthew P. Breen, Seward Baker, Charles S. Whitman, Joseph F. Moss, James J. Walsh, Henry Steinert, Daniel E. Finn, Charles G. F. Wahle, Alexander Finelite. William A. Sweetser.
James McCabe Secretary One Hundred and Twenty-first street and Sylvan place.
First District—Criminal Court Building.
Second District—Jefferson Market
Third District—No. 69 Essex street.
Fourth District—Fifty-seventh street, near Lexington avenue.
Fifth District—One Hundred and Twenty-first street, southeastern corner of Sylvan place
Sixth District—One Hundred and Sixty-first street and Brook avenue.
Seventh District—Fifty-fourth street, west of Eighth avenue.
Eighth District—Main street, Westchester.

SECOND DIVISION.

Borough of Brooklyn.

City Magistrates—Alfred E. Steers, A. V. B. Voorhees, Jr., James G. Tighe, Edward J. Dooley, John Naumer, E. G. Higgenbotham. Frank E O'Reilly, Henry J. Furlong, John F. Hylan, Alexander H. Geismar.
President of the Board, Frank E. O'Reilly, No. 249 Manhattan avenue.
Secretary to the Board, William F. Delaney, No. 495 Gates avenue.
First District—No. 318 Adams street.
Second District—Court and Butler streets.
Third District—Myrtle and Vanderbilt avenues.
Fourth District—Lee avenue and Clymer street
Fifth District—Manhattan avenue and Powers street.
Sixth District—No. 495 Gates avenue.
Seventh District—No. 31 Snider avenue (Flatbush)
Eighth District—West Eighth street (Coney Island).

Borough of Queens.

City Magistrates—Matthew J. Smith, Luke I. Connorton. Edmund J. Healy.
First District—Long Island City.
Second District—Flushing.
Third District—Far Rockaway.

Borough of Richmond.

City Magistrates—John Croak, Nathaniel Marsh
First District—New Brighton, Staten Island.
Second District—Stapleton, Staten Island.

MUNICIPAL COURTS.

BOROUGH OF MANHATTAN.

First District—Third, Fifth and Eighth Wards and all that part of the First Ward lying west of Broadway and Whitehall street, including Governor's Island, Bedloe's Island, Ellis Island and the Oyster Islands. New Court-house, No. 128 Prince street, corner of Wooster street.
Wauhope Lynn, Justice. Thomas O'Connell, Clerk.
Clerk's Office open from 9 a. m. to 4 p. m.

Second District—Second, Fourth, Sixth and Fourteenth Wards, and all that portion of the First Ward lying south and east of Broadway and Whitehall street. Court-room, No. 59 Madison street.
John Hoyer, Justice. Francis Mangin, Clerk.
Clerk's Office open from 9 a. m. to 4 p. m.
Court opens daily at 9 a. m., and remains open until daily calendar is disposed of and close of the daily business, except on Sundays and legal holidays.

Third District—Ninth and Fifteenth Wards. Court room, southwest corner Sixth avenue and West Tenth street. Court opens daily (Sundays and legal holidays excepted), from 9 a. m. to 4 p. m.
William F. Moore, Justice. Daniel Williams, Clerk

Fourth District—Tenth and Seventeenth Wards. Court-room, No. 30 First street, corner Second avenue. Clerk's Office open daily from 9 a. m. to 4 p. m. Court opens 9 a. m. daily, and remains open to close of business.
George F. Roesch, Justice. Andrew Lang, Clerk.

Fifth District—The Fifth District embraces the Eleventh Ward and all that portion of the Thirteenth Ward which lies east of the centre line of Norfolk street and north of the centre line of Grand street and west of the centre line of Pitt street and north of the centre line of Delancey street and northwest of Clinton street to Rivington street, and on the centre line of Rivington street south to Norfolk street. Court-room, No. 154 Clinton street.
Benjamin Hoffman, Justice. Thomas Fitzpatrick, Clerk.

Sixth District—Eighteenth and Twenty-first Wards. Court-room, northwest corner Twenty-third street and Second avenue. Court opens at 9 a. m. daily (except legal holidays), and continues open until close of business.
Daniel F. Martin, Justice. Abram Bernard, Clerk.

Seventh District—That portion of Nineteenth Ward east of Lexington avenue, bounded on the south by the north of East Fortieth street and on the north by the south side of East Eighty-sixth street, also that portion bounded on the south by the north side of East Sixty-first street, on the west by the east side of Park avenue, and on the north by the south side of East Sixty-fifth street. Court-room, No. 151 East Fifty-seventh street. Court opens every morning at 9 o'clock (except Sundays and legal holidays), and continues open to close of business.
Herman Joseph, Justice. Edward A. McQuade Clerk

Eighth District—Sixteenth and Twentieth Wards. Court-room northwest corner of Twenty-third street and Eighth avenue. Court opens at 9 a. m. and continues open until close of business. Summary proceedings and return causes called at 9 a. m. Calendar trial causes, 9 a. m.
Clerk's Office open from 9 a. m. to 4 p. m., and on Saturdays until 12 m.
Trial days and Return days, each Court day.
James W. McLaughlin, Justice. Henry Merzbach, Clerk.

Ninth District—Twelfth Ward, except that portion thereof which lies west of the centre line of Lenox or Sixth avenue and of the Harlem river, north of the terminus of Lenox avenue. Court-room, No. 170 East One Hundred and Twenty-first street, southeast corner of Sylvan place. Court opens every morning at 9 o'clock (except Sundays and legal holidays), and continues open to close of business.
Joseph P. Fallon, Justice. William J. Kennedy Clerk.
Clerk's Office open from 9 a. m. to 4 p. m.

Tenth District—The Tenth District embraces that portion of the Twenty-second Ward south of Seventieth street, west of Central Park West to Fifty-ninth street, south on Fifty-ninth street to Seventh avenue, west on Seventh avenue to Fifty-third street, north on Fifty-third street to Eighth avenue, west on Eighth avenue to Fortieth street, north side to Hudson river. Court-room. No. 314 West Fifty-fourth street. Court open from 9 a. m. to 4 p. m., Sundays and legal holidays excepted.
Thomas E. Murray, Justice. Michael Skelly, Clerk

Eleventh District—The Eleventh District embraces that portion of the Twelfth Ward which lies north of the centre line of West One Hundred and Tenth street, between Lenox avenue and Seventh avenue, north of the centre line of One Hundred and Twentieth street, between Seventh avenue and Broadway; north of the centre line of One Hundred and Nineteenth street, between Broadway and the North or Hudson river, and west of the centre line of Lenox or Sixth avenue and of the Harlem river north

of the terminus of Lenox or Sixth avenue. Court-room, No. 70 Manhattan street. Clerk's Office open daily (Sundays and legal holidays excepted) from 9 a. m. to 4 p. m. Court convenes daily at 9 a. m.

Francis J. Worcester, Justice. Heman B. Wilson, Clerk.

Twelfth District—The Twelfth District embraces that portion of the Twenty-second Ward north of Seventieth street, and that portion of the Twelfth Ward which lies north of the centre line of Eighty-sixth street and west of the centre line of Seventh avenue and south of the centre line of One Hundred and Twentieth street, between Seventh avenue and Broadway, and south of the centre line of One Hundred and Nineteenth street, between Broadway and the North or Hudson river. Court-room, No. 2555 Broadway.

Alfred P. W. Seaman, Justice. James V. Gilloon, Clerk.

Thirteenth District—South side of Delancey street from East river to Pitt street; east side of Pitt street, Grand street, south side of Grand street to Norfolk street, east side of Norfolk street to Division street, south side of Division street to Catharine street, east side of Catharine street to East river. Clerk's office open daily (Sundays and legal holidays excepted) from 9 a. m. to 4 p. m.

Leon Sanders, Justice. James J. Devlin, Clerk.

Court-room, No. 264 Madison street.

Fourteenth District—The Fourteenth District embraces that portion of the Borough of Manhattan bounded as follows: Beginning at West Fortieth street and Eighth avenue, north on Eighth avenue to West Fifty-third street; east on West Fifty-third street to Seventh avenue; north on Seventh avenue to West Fifty-ninth street to Eighth avenue; north on Eighth avenue and west on Central Park West to the Transverse road at Central Park West and West Ninety-seventh street; east on Transverse road to Fifth avenue and East Ninety-seventh street; south on Fifth avenue to East Ninety-sixth street; east on Ninety-sixth street to Lexington avenue; south on Lexington avenue to East Sixty-fifth street; west on East Sixty-fifth street to Park avenue; south on Park avenue to East Sixty-first street; east on East Sixty-first street to Lexington avenue; south on Lexington avenue to East Fortieth street; west on East and West Fortieth streets to the point of beginning at West Fortieth street and Eighth avenue.

Edgar J. Lauer, Justice. William J. Chamberlain, Clerk.

Court-house No. 620 Madison avenue.

BOROUGH OF THE BRONX.

First District—All that part of the Twenty-fourth Ward which was lately annexed to the City and County of New York by Chapter 934 of the Laws of 1895, comprising all of the late Town of Westchester and part of the Towns of Eastchester and Pelham, including the Villages of Wakefield and Williamsbridge Court-room, Town Hall, Main street, Westchester Village. Court open daily (Sundays and legal holidays excepted) from 9 a. m. to 4 p. m. Trial of causes are Tuesday and Friday of each week.

William W. Penfield, Justice. Thomas F. Delahanty, Clerk.

Office hours from 9 a. m. to 4 p. m.; Saturdays, closing at 12 m.

Second District—Twenty-third and Twenty-fourth Wards, except the territory described in chapter 934 of the Laws of 1895. Court-room, southeast corner of Washington avenue and One Hundred and Sixty-second street. Office hours from 9 a. m. to 4 p. m. Court opens at 9 a. m.

John M. Tierney, Justice. Thomas A. Maher, Clerk.

BOROUGH OF BROOKLYN.

First District—Comprising First, Second, Third, Fourth, Fifth, Sixth, Tenth and Twelfth Wards and that portion of the Eleventh Ward beginning at the intersection of the centre lines of Hudson and Myrtle avenues, thence along the centre line of Myrtle avenue to North Portland avenue, thence along the centre line of North Portland avenue to Flushing avenue, thence along the centre line of Flushing avenue to Navy street, thence along the centre line of Navy street to Johnson street, thence along the centre line of Johnson street to Hudson avenue, and thence along the centre line of Hudson avenue to the point of beginning, of the Borough of Brooklyn. Court-house, northwest corner State and Court streets.

John J. Walsh, Justice. Edward Moran, Clerk.

Clerk's Office open from 9 a. m. to 4 p. m.

Second District—Seventh Ward and that portion of the Twenty-first and Twenty-third Wards west of the centre line of Stuyvesant avenue and the centre line of Schenectady avenue, also that portion of the Twentieth Ward beginning at the intersection of the centre lines of North Portland and Myrtle avenues, thence along the centre line of Myrtle avenue to Waverly avenue, thence along the centre line of Waverly avenue to Park avenue, thence along the centre line of Park avenue to Washington avenue, thence along the centre line of Washington avenue to Flushing avenue thence along the centre line of Flushing avenue to North Portland avenue, and thence along the centre line of North Portland avenue to the point of beginning.

Court-room, No. 495 Gates avenue.

Gerard B. Van Wart, Justice. Franklin B. Van Wart, Clerk.

Clerk's Office open from 9 a. m. to 4 p. m.

Third District—Embraces the Thirteenth, Fourteenth, Fifteenth, Sixteenth, Seventeenth, Eighteenth and Nineteenth Wards, and that portion of the Twenty-seventh Ward lying northwest of the centre line of Starr street between the boundary line of Queens County and the centre line of Central avenue, and northwest of the centre line of Suydam street between the centre lines of Central and Bushwick avenues, and northwest of the centre line of Willoughby avenue, between the centre lines of Bushwick avenue and Broadway. Court-house, Nos. 6 and 8 Lee avenue, Brooklyn.

Philip D. Meagher, Justice. John W. Carpenter, Clerk.

Clerk's Office open from 9 a. m. to 4 p. m.

Court opens at 9 a. m.

Fourth District—Embraces the Twenty-fourth and Twenty-fifth Wards, that portion of the Twenty-first and Twenty-third Wards lying east of the centre line of Stuyvesant avenue and east of the centre line of Schenectady avenue, and that portion of the Twenty-seventh Ward lying southeast of the centre line of Starr street between the boundary line of Queens and the centre line of Central avenue, and southeast of the centre line of Suydam street between the centre lines of Central and Bushwick avenues, and southeast of the centre line of Willoughby avenue between the centre lines of Bushwick avenue and Broadway.

Court-room, No. 14 Howard avenue.

Thomas H. Williams, Justice. G. J. Wiederhold, Clerk. Milton I. Williams, Assistant Clerk.

Clerk's Office open from 9 a. m. to 4 p. m.

Fifth District — Contains the Eighth, Thirtieth and Thirty-first Wards, and so much of the Twenty-second Ward as lies south of Prospect avenue. Court-house, northwest corner of Fifty-third street and Third avenue.

Cornelius Furgueson, Justice. Jeremiah J. O'Leary, Clerk.

Clerk's Office open from 9 a. m. to 4 p. m.

Sixth District—The Sixth District embraces the Ninth and Twenty-ninth Wards and that portion of the Twenty-second Ward north of the centre line of Prospect avenue; also that portion of the Eleventh and the Twentieth Wards, beginning at the intersection of the centre lines of Bridge and Fulton streets; thence along the centre line of Fulton street to Flatbush avenue; thence along the centre line of Flatbush avenue to Atlantic avenue; thence along the centre line of Atlantic to Washington avenue; thence along the centre line of Washington avenue to Park avenue; thence along the centre line of Park avenue to Waverly avenue; thence along the centre line of Waverly avenue to Myrtle avenue; thence along the centre line of Myrtle avenue to Hudson avenue; thence along the centre line of Hudson avenue to Johnson street; thence along the centre line of Johnson street to Bridge street, and thence along the centre line of Bridge street to the point of beginning.

Justice, Lucien S. Bayliss. Charles P. Bible, Clerk.

Court-house No. 585 Fulton street.

Seventh District—The Seventh District embraces the Twenty-sixth, Twenty-eighth and Thirty-second Wards.

Alexander S. Rosenthal, Justice. Samuel F. Brothers, Clerk.

Court-house, corner Pennsylvania avenue and Fulton street.

Clerk's Office open from 9 a. m. to 4 p. m.; Saturdays, 9 a. m. to 12 m. Trial days Mondays, Wednesdays and Fridays.

BOROUGH OF QUEENS.

First District—First Ward (all of Long Island City formerly composing five wards). Court-room St. Mary's Lyceum, Nos. 115 and 117 Fifth street, Long Island City.

Clerk's Office open from 9 a. m. to 4 p. m. each day, excepting Saturdays, closing at 12 m. Trial days Mondays, Wednesdays and Fridays. All other business transacted on Tuesdays and Thursdays.

Thomas C. Kadien, Justice. Thomas F. Kennedy, Clerk.

Second District—Second and Third Wards, which includes the territory of the late Towns of Newtown and Flushing. Court-room, in Court-house of the late Town of Newtown, corner of Broadway and Court street, Elmhurst, New York. P. O. Address, Elmhurst, New York.

William Rasquin, Jr., Justice. Henry Walter, Jr., Clerk. John E. Prendeville, Assistant Clerk. James B. Snediker, Stenographer.

Clerk's Office open from 9. a. m. to 4 p. m.

Third District—Fourth and Fifth Wards, comprising the territory of the former Towns and Villages of Jamaica, Far Rockaway and Rockaway Beach.

James F. McLaughlin, Justice. George W. Damon, Clerk.

Court-house, Town Hall, Jamaica.

Telephone, 189 Jamaica.

Clerk's Office open from 9 a. m. to 4 p. m.

Court held on Mondays, Wednesdays and Fridays at 9 a. m.

BOROUGH OF RICHMOND.

First District—First and Third Wards (Towns of Castleton and Northfield). Court-room, former Village Hall, Lafayette avenue and Second street, New Brighton.

Thomas C. Brown, Justice. Anning S. Prall, Clerk.

Clerk's Office open from 9 a. m. to 4 p. m.

Second District—Second, Fourth and Fifth Wards (Towns of Middletown, Southfield and Westfield). Court-room, former Edgewater Village Hall, Stapleton.

George W. Stake, Justice. Peter Tiernan, Clerk.

Clerk's Office open from 9 a. m. to 4 p. m.

Court opens at 9 a. m. Calendar called 10 a. m. Court continued until close of business. Trial days Mondays, Wednesdays and Fridays.

BOARD MEETINGS.

The Board of Estimate and Apportionment meets in the Old Council Chamber (Room 16), City Hall, every Friday, at 10.30 o'clock a. m.

JOSEPH HAAG, Secretary.

The Commissioners of the Sinking Fund meet in the Old Council Chamber (Room 16), City Hall, at call of the Mayor.

N. TAYLOR PHILLIPS, Deputy Comptroller, Secretary.

The Board of City Record meet in the Old Council Chamber (Room 16), City Hall, at call of the Mayor.

PATRICK J. TRACY, Supervisor. Secretary.

BOROUGH OF MANHATTAN.

Office of the President of the Borough of Manhattan, New York, December 26, 1906.

NOTICE IS HEREBY GIVEN, IN ACCORDance with section 432 of the Charter of The City of New York, that a communication from the Metropolitan Parks Association, requesting the laying out of a park bounded by East Houston street, Orchard street, Stanton street and Allen street, has been filed in this office, and is now ready for public inspection, and that a meeting of the Board of Local Improvements of the Bowery District for Local Improvements will be held in the Borough Office, City Hall, on the 8th day of January, 1907, at 11.30 a. m., at which meeting said communication will be submitted to the Board.

JOHN F. AHEARN, President.

Bernard Downing, Secretary.

Office of the President of the Borough of Manhattan, New York, December 26, 1906.

NOTICE IS HEREBY GIVEN, IN ACCORDance with section 432 of the Charter of The City of New York, that a petition signed by property owners of the Washington Heights District for Local Improvements, requesting an alteration of the map or plan of The City of New York by discontinuing and closing the following streets:

Ninth avenue, from the southerly side of Two Hundred and Eighteenth street (if extended across said avenue) to Broadway or Kingsbridge road;

Two Hundred and Eighteenth street, from Broadway or Kingsbridge road to Ninth avenue;

Two Hundred and Nineteenth street, from Broadway or Kingsbridge road to Ninth avenue;

Two Hundred and Twentieth street, from Broadway or Kingsbridge road to Ninth avenue, as shown on annexed map;

—has been filed in this office, and is now ready for public inspection, and that a meeting of the Board of Local Improvements of the Washington Heights District for Local Improvements will be held in the Borough Office, City Hall, on the 8th day of January, 1907, at 11 a. m., at which meeting said petition will be submitted to the Board.

JOHN F. AHEARN, President.

Bernard Downing, Secretary.

Office of the President of the Borough of Manhattan, New York, December 26, 1906.

NOTICE IS HEREBY GIVEN, IN ACCORDance with section 432 of the Charter of The City of New York, that a petition signed by property owners of the Washington Heights District for Local Improvements, requesting the laying of a sidewalk on the south side of One Hundred and Forty-third street, beginning at a point 80 feet east of Amsterdam avenue and running thence easterly to Convent avenue, has been filed in this office, and is now ready for public inspection, and that a meeting of the Board of Local Improvements of the Washington Heights District for Local Improvements will be held in the Borough Office, City Hall, on the 8th day of January, 1907, at 11 a. m., at which meeting said petition will be submitted to the Board.

JOHN F. AHEARN, President.

Bernard Downing, Secretary.

Office of the President of the Borough of Manhattan, New York, December 26, 1906.

NOTICE IS HEREBY GIVEN, IN ACCORDance with section 432 of the Charter of The City of New York, that a petition signed by property owners of the Washington Heights District for Local Improvements, requesting the paving of West One Hundred and Eightieth street, from Broadway to Buena Vista avenue, has been filed in this office, and is now ready for public inspection, and that a meeting of the Board of Local Improvements of the Washington Heights District for Local Improvements will be held in the Borough Office, City Hall, on the 8th day of January, 1907, at 11 a. m., at which meeting said petition will be submitted to the Board.

JOHN F. AHEARN, President.

Bernard Downing, Secretary.

Office of the President of the Borough of Manhattan, New York, December 26, 1906.

NOTICE IS HEREBY GIVEN, IN ACcordance with section 432 of the Charter of The City of New York, that a petition signed by property owners of the Washington Heights District for Local Improvements requesting the regulating and grading of West One Hundred and Sixty-second street, between Broadway and Fort Washington avenue, has been filed in this office, and is now ready for public inspection, and that a meeting of the Board of Local Improvements of the Washington Heights District for Local Improvements will be held in the Borough Office, City Hall, on the 8th day of January, 1907, at 11 a. m., at which meeting said petition will be submitted to the Board.

JOHN F. AHEARN, President.

Bernard Downing, Secretary.

Office of the President of the Borough of Manhattan, New York, December 26, 1906.

NOTICE IS HEREBY GIVEN, IN ACcordance with section 432 of the Charter of The City of New York, that a petition signed by property owners and residents of the Washington Heights District for Local Improvements requesting the construction of a sewer in Fairview avenue, between Eleventh avenue and Broadway, has been filed in this office, and is now ready for public inspection, and that a meeting of the Board of Local Improvements of the Washington Heights District for Local Improvements will be held in the Borough Office, City Hall, on the 8th day of January, 1907, at 11 a. m., at which meeting said petition will be submitted to the Board.

JOHN F. AHEARN, President.

Bernard Downing, Secretary.

Office of the President of the Borough of Manhattan, New York, December 26, 1906.

NOTICE IS HEREBY GIVEN, IN ACcordance with section 432 of the Charter of The City of New York, that a petition signed by property owners of the Bowling Green District for Local Improvements requesting the construction of a sewer in Fletcher street, between South and Front streets, has been filed in this office, and is now ready for public inspection, and that a meeting of the Board of Local Improvements of the Bowling Green District for Local Improvements will be held in the Borough Office, City Hall, on the 8th day of January, 1907, at 11.45 a. m., at which meeting said petition will be submitted to the Board.

JOHN F. AHEARN, President.

Bernard Downing, Secretary.

Office of the President of the Borough of Manhattan, New York, December 26, 1906.

NOTICE IS HEREBY GIVEN, IN ACcordance with section 432 of the Charter of The City of New York, that a petition signed by property owners of the Washington Heights District for Local Improvements requesting the construction of sewer in One Hundred and Fifty-eighth street, between Edgecombe road and Avenue St. Nicholas, has been filed in this office, and is now ready for public inspection, and that a meeting of the Board of Local Improvements of the Washington Heights District for Local Improvements will be held in the Borough Office, City Hall, on the 8th day of January, 1907, at 11 a. m., at which meeting said petition will be submitted to the Board.

JOHN F. AHEARN, President.

Bernard Downing, Secretary.

Office of the President of the Borough of Manhattan, City Hall, The City of New York.

SEALED BIDS OR ESTIMATES WILL BE received by the President of the Borough of Manhattan, at the City Hall, Room 16, until 3 o'clock p. m. on

WEDNESDAY, JANUARY 9, 1907.

No. 1. FOR REGULATING AND PAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF NAGLE AVENUE, FROM BROADWAY TO TENTH AVENUE.

Engineer's estimate of amount of work to be done:

23,200 square yards of asphalt block pavement.

3,250 cubic yards of concrete, including mortar bed.

2,000 linear feet new bluestone curbstone, furnished and set.

4,700 linear feet old bluestone curbstone, redressed, rejointed and reset.

34 noiseless covers, complete, for sewer manholes, furnished and set (not to be bid for).

5 noiseless covers, complete, for water manholes, furnished and set (not to be bid for).

8,600 square feet planking to be removed (not to be bid for).

Time allowed for doing and completing above work is 100 working days.

Amount of security required is Twenty Thousand Dollars.

No. 2. FOR REGULATING AND PAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF WICKER PLACE, FROM JANSEN AVENUE TO KINGSBRIDGE AVENUE.

Engineer's estimate of amount of work to be done:

1,300 square yards of asphalt block pavement.

170 cubic yards of concrete, including mortar bed.

77 linear feet new bluestone curbstone, furnished and set.

775 linear feet old bluestone curbstone, redressed, rejointed and reset.

Time allowed for doing and completing above work is 20 working days.

Amount of security required is One Thousand Dollars.

No. 3. FOR REGULATING AND PAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF VAN CORLEAR PLACE, FROM A LINE 175 FEET WEST OF KINGSBRIDGE AVENUE SOUTHERLY AROUND THE CIRCLE AND NORTHERLY TO WICKER PLACE.

Engineer's estimate of amount of work to be done:

2,900 square yards of asphalt block pavement.

460 cubic yards of concrete, including mortar bed.

300 linear feet new bluestone curbstone, furnished and set.

1,900 linear feet old bluestone curbstone, redressed, rejointed and reset.

Time allowed for doing and completing above work is 30 working days.

Amount of security required is Twenty-five Hundred Dollars.

No. 4. FOR REGULATING AND PAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF TERRACE VIEW AVENUE NORTH, FROM BROADWAY TO THE WESTERLY SIDE OF JANSEN AVENUE.

Engineer's estimate of amount of work to be done:

3,330 square yards of asphalt block pavement,

420 cubic yards of concrete, including mortar bed.

380 linear feet new bluestone curbstone furnished and set.

1,530 linear feet old bluestone curbstone redressed, rejointed and reset.

Time allowed for doing and completing above work is 40 working days.

Amount of security required is Three Thousand Five Hundred Dollars.

No. 5. FOR REGULATING AND PAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF TERRACE VIEW AVENUE SOUTH, FROM THE WESTERLY LINE OF JANSEN AVENUE TO THE WESTERLY LINE OF KINGSBRIDGE AVENUE.

Engineer's estimate of amount of work to be done:

2,450 square yards of asphalt block pavement,

310 cubic yards of concrete, including mortar bed.

250 linear feet new bluestone curbstone furnished and set.

1,000 linear feet old bluestone curbstone redressed, rejointed and reset.

Time allowed for doing and completing above work is 30 working days.

Amount of security required is Two Thousand Dollars.

No. 6. FOR REGULATING AND PAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF ONE HUNDRED AND EIGHTIETH STREET, FROM AMSTERDAM AVENUE TO BROADWAY.

Engineer's estimate of amount of work to be done:

4,480 square yards of asphalt block pavement.

700 cubic yards of concrete, including mortar bed.

400 linear feet new bluestone curbstone, furnished and set.

2,300 linear feet old bluestone curbstone, redressed, rejointed and reset.

11 noiseless covers, complete, for sewer manholes, furnished and set (not to be bid for).

4 noiseless covers, complete, for water manholes, furnished and set (not to be bid for).

Time allowed for doing and completing above work is 40 working days.

Amount of security required is Four Thousand Dollars.

No. 7. FOR REGULATING AND PAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF ONE HUNDRED AND EIGHTY-EIGHTH STREET FROM AMSTERDAM AVENUE TO ST. NICHOLAS AVENUE.

Engineer's estimate of amount of work to be done:

2,610 square yards of asphalt block pavement,

325 cubic yards of concrete, including mortar bed.

150 linear feet new bluestone curbstone furnished and set.

1,410 linear feet old bluestone curbstone redressed, rejointed and reset.

8 noiseless covers, complete, for sewer manholes furnished and set (not to be bid for).

3 noiseless covers, complete, for water manholes, furnished and set (not to be bid for).

Time allowed for doing and completing above work is 30 working days.

Amount of security required is Two Thousand Five Hundred Dollars.

No. 8. FOR REGULATING AND REPAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF CITY HALL PLACE, FROM DUANE STREET TO PEARL STREET.

Engineer's estimate of amount of work to be done:

962 square yards of asphalt block pavement.

155 cubic yards of concrete, including mortar bed.

590 linear feet of new bluestone curbstone, furnished and set.

50 linear feet of old bluestone curbstone, redressed, rejointed and reset.

3 noiseless covers, complete, for sewer manholes, furnished and set.

2 noiseless covers, complete, for water manholes, furnished and set.

Time allowed for doing and completing above work is 20 working days.

Amount of security required is One Thousand Dollars.

No. 9. FOR REGULATING AND REPAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF WASHINGTON STREET, FROM MORTON STREET TO CHRISTOPHER STREET.

Engineer's estimate of amount of work to be done:
2,090 square yards of asphalt block pavement.
300 cubic yards of concrete, including mortar bed.
770 linear feet of new bluestone curbstone, furnished and set.
30 linear feet of old bluestone curbstone, redressed, rejointed and reset.
7 noiseless covers, complete, for sewer manholes, furnished and set.
2 noiseless covers, complete, for water manholes, furnished and set.

Time allowed for doing and completing above work is 25 working days.

Amount of security required is Two Thousand Dollars.

No. 10. FOR REGULATING AND REPAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF FIFTY-SIXTH STREET, FROM NINTH TO TENTH AVENUE.

Engineer's estimate of amount of work to be done:
2,780 square yards of asphalt block pavement.
440 cubic yards of concrete, including mortar bed.
1,670 linear feet new bluestone curbstone, furnished and set.
100 linear feet old bluestone curbstone, redressed, rejointed and reset.
8 noiseless covers, complete, for sewer manholes, furnished and set.
2 noiseless covers, complete, for water manholes, furnished and set.

Time allowed for doing and completing above work is 30 working days.

Amount of security required is Two Thousand Five Hundred Dollars.

No. 11. FOR REGULATING AND REPAVING WITH ASPHALT BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF NINETY-THIRD STREET, FROM LEXINGTON AVENUE TO PARK AVENUE.

Engineer's estimate of amount of work to be done:
1,420 square yards of asphalt block pavement.
220 cubic yards of concrete, including mortar bed.
750 linear feet new bluestone curbstone, furnished and set.
40 linear feet old bluestone curbstone, redressed, rejointed and reset.
4 noiseless covers, complete, for sewer manholes, furnished and set.
2 noiseless covers, complete, for water manholes, furnished and set.

Time allowed for doing and completing above work is 20 working days.

Amount of security required is One Thousand Five Hundred Dollars.

No. 12. FOR REGULATING AND REPAVING WITH ASPHALT PAVEMENT ON PRESENT PAVEMENT RELAID AS FOUNDATION THE ROADWAY OF AVENUE A, FROM SIXTY-THIRD STREET TO SIXTY-FOURTH STREET.

Engineer's estimate of amount of work to be done:
2,350 square yards of asphalt pavement, including binder course.
2,350 square yards of old stone pavement to be relaid as foundation or in approaches, etc.
550 linear feet new bluestone curbstone, furnished and set.
50 linear feet old bluestone curbstone, redressed, rejointed and reset.
4 noiseless covers, complete, for sewer manholes, furnished and set.
1 noiseless cover, complete, for water manhole, furnished and set.

Time allowed for doing and completing above work is 30 working days.

Amount of security required is One Thousand Five Hundred Dollars.

No. 13. FOR REGULATING AND REPAVING WITH ASPHALT PAVEMENT ON PRESENT PAVEMENT RELAID AS FOUNDATION THE ROADWAY OF AMSTERDAM AVENUE, FROM NINETY-SIXTH STREET TO NINETY-SEVENTH STREET.

Engineer's estimate of amount of work to be done:
1,980 square yards of asphalt pavement, including binder course.
1,980 square yards of old stone pavement to be relaid as foundation or in approaches, etc.
400 linear feet new bluestone curbstone, furnished and set.
20 linear feet old bluestone curbstone, redressed, rejointed and reset.
5 noiseless covers, complete, for sewer manholes, furnished and set.
2 noiseless covers, complete, for water manholes, furnished and set.

Time allowed for doing and completing above work is 25 working days.

Amount of security required is One Thousand Five Hundred Dollars.

No. 14. REGULATING AND REPAVING WITH ASPHALT PAVEMENT ON PRESENT PAVEMENT RELAID AS FOUNDATION THE ROADWAY OF NINETY-FIRST STREET, FROM LEXINGTON AVENUE TO THIRD AVENUE.

Engineer's estimate of amount of work to be done:
1,500 square yards of asphalt pavement, including binder course.
1,510 square yards of old stone pavement to be relaid as foundation or in approaches, etc.
800 linear feet new bluestone curbstone, furnished and set.
100 linear feet old bluestone curbstone, furnished and set.
3 noiseless covers, complete, for sewer manholes, furnished and set.
1 noiseless cover, complete, for water manhole, furnished and set.

Time allowed for doing and completing above work is 20 working days.

Amount of security required is One Thousand Dollars.

No. 15. FOR REGULATING AND REPAVING WITH WOOD BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF BOWLING GREEN, FROM WHITEHALL STREET TO STATE STREET.

Engineer's estimate of amount of work to be done:
1,200 square yards of wood block pavement.
150 cubic yards of concrete, including mortar bed.
1 noiseless cover, complete, for sewer manhole, furnished and set.
1,200 square yards old stone blocks, to be purchased and removed by contractor.

Time allowed for doing and completing above work is 20 working days.

Amount of security required is One Thousand Dollars.

No. 16. FOR REGULATING AND REPAVING WITH WOOD BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF STATE STREET, FROM BOWLING GREEN TO WHITEHALL STREET.

Engineer's estimate of amount of work to be done:
6,400 square yards of wood block pavement.
880 cubic yards of concrete, including mortar bed.
500 linear feet new bluestone curbstone, furnished and set.
1,060 linear feet old bluestone curbstone, redressed, rejointed and reset.
9 noiseless covers, complete, for sewer manholes, furnished and set.
7 noiseless covers, complete, for water manholes, furnished and set.
6,400 square yards old stone blocks, to be purchased and removed by contractor.

Time allowed for doing and completing above work is 50 working days.

Amount of security required is Five Thousand Dollars.

No. 17. FOR REGULATING AND REPAVING WITH WOOD BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF BRIDGE STREET, FROM WHITEHALL STREET TO STATE STREET.

Engineer's estimate of amount of work to be done:
760 square yards of wood block pavement.
95 cubic yards of concrete, including mortar bed.
3 noiseless covers, complete, for sewer manholes, furnished and set.
760 square yards old stone blocks, to be purchased and removed by contractor.

Time allowed for doing and completing above work is 15 working days.

Amount of security required is One Thousand Dollars.

No. 18. FOR REGULATING AND REPAVING WITH WOOD BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF WHITEHALL STREET, FROM BOWLING GREEN TO SOUTH FERRY.

Engineer's estimate of amount of work to be done:
11,200 square yards wood block pavement.
1,500 cubic yards of concrete, including mortar bed.
1,000 linear feet new bluestone curbstone, furnished and set.
260 linear feet old bluestone curbstone, redressed, rejointed and reset.
20 noiseless covers, complete, for sewer manholes, furnished and set.
6 noiseless covers, complete, for water manholes, furnished and set.
11,200 square yards old stone blocks, to be purchased and removed by contractor.

Time allowed for doing and completing above work is 75 working days.

Amount of security required is Nine Thousand Dollars.

No. 19. FOR REGULATING AND REPAVING WITH GRANITE BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF SOUTH STREET, FROM WHITEHALL STREET TO CORLEARS STREET.

Engineer's estimate of amount of work to be done:
68,200 square yards new granite block pavement, including sand bed, laid with paving cement joints.
68,200 square yards old stone blocks, to be purchased by contractor and removed.
12,000 cubic yards of concrete.
16,500 square feet new bridgestone, furnished and laid.
1,000 square feet old bridgestone redressed, rejointed and relaid.
7,000 linear feet new curbstone, furnished and set.
1,000 linear feet old curbstone redressed, rejointed and reset.
94 new sewer manhole heads and covers.
70 new water manhole heads and covers.

Time allowed for doing and completing above work is 100 working days.

Amount of security required is Sixty Thousand Dollars.

No. 20. FOR REGULATING AND REPAVING WITH GRANITE BLOCK PAVEMENT ON CONCRETE FOUNDATION THE ROADWAY OF WEST STREET, FROM BATTERY PLACE TO GANSEVOORT STREET.

Engineer's estimate of amount of work to be done:
71,870 square yards new granite block pavement, including sand bed, laid with paving cement joints.
71,870 square yards old stone blocks to be purchased by contractor and removed.
9,469 cubic yards of concrete.
33,740 square feet new bridgestone, furnished and laid.
900 square feet old bridgestone redressed, rejointed and relaid.
10,290 linear feet new curbstone furnished and set.
330 linear feet old curbstone redressed, rejointed and reset.
112 new sewer manhole heads and covers.
91 new water manhole heads and covers.

Time allowed for doing and completing above work is 100 working days.

Amount of security required is Seventy Thousand Dollars.

No. 21. REGULATING, GRADING, CURBING, FLAGGING, ETC., NORTHERN AVENUE EXTENSION, FROM A POINT 774 FEET NORTH OF ONE HUNDRED AND EIGHTY-FIRST STREET TO FORT WASHINGTON AVENUE.

Engineer's estimate of amount of work to be done:
3,816 cubic yards of earth excavation.
16,000 cubic yards rock excavation.
13,000 cubic yards filling, to be furnished (exclusive of that secured from excavation).
1,190 cubic yards dry rubble masonry, for retaining walls and culverts.
4,225 cubic yards cement masonry, for retaining walls and culverts.
735 cubic yards of concrete, for foundation.
252 linear feet 12-inch culvert pipe, furnished and laid.
2,400 linear feet guard rail.
400 linear feet paved gutter, 4 feet wide.
180 square feet new bridgestone, furnished and laid.
3 square yards granite pavement.
5,288 linear feet new curbstone, furnished and set.
21,153 square feet new flagstone, furnished and laid.

Time allowed for doing and completing above work is 300 working days.

Amount of security required is Fifteen Thousand Dollars.

The contracts must be bid for separately and the bids will be compared and the contracts awarded at a lump or aggregate sum for each contract.

The bidder will state the price of each item or article contained in the specifications or schedules herein contained or hereto annexed, per foot, yard or other unit of measure, or article, by which the bids will be tested. The extensions must be made and footed up, as the bids will be read from the total.

Blank forms may be had and the plans and drawings may be seen at the office of the Commissioner of Public Works, Nos. 13 to 21 Park row, Bureau of Highways, Borough of Manhattan.

JOHN F. AHEARN,
Borough President.

The City of New York, December 27, 1906.

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☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

OFFICE OF THE PRESIDENT OF THE BOROUGH OF MANHATTAN, CITY HALL, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the President of the Borough of Manhattan at the City Hall, Room 16, until 3 o'clock p. m. on

THURSDAY, DECEMBER 27, 1906.

FOR FURNISHING ALL THE LABOR, MATERIALS, TOOLS, ETC., DURING THE YEAR 1907 NECESSARY TO CLEAN ALL THE GLASS IN ALL THE WINDOWS AND DOORS OF VARIOUS PUBLIC BUILDINGS, COURTS AND OFFICES UNDER THE CARE OF THE PRESIDENT OF THE BOROUGH OF MANHATTAN.

Time for the completion of the work and the full performance of the contract will be by 31st of December, 1907.

The amount of security required is Three Thousand Dollars ($3,000).

The bidder will state the price for each item contained in the specifications. The extensions must be made and footed up, as the bids will be read from the total and award made to the lowest bidder. The bids will be compared and the contract awarded at a lump or aggregate sum.

Blank forms and specifications can be obtained at the office of the Commissioner of Public Works, Bureau of Public Buildings and Offices, No. 21 Park row, Borough of Manhattan.

JOHN F. AHEARN,
Borough President.

The City of New York, December 15, 1906.

d15,27

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

BOROUGH OF THE BRONX.

OFFICE OF THE PRESIDENT OF THE BOROUGH OF THE BRONX, MUNICIPAL BUILDING, CORNER THIRD AVENUE AND ONE HUNDRED AND SEVENTY-SEVENTH STREET, CROTONA PARK, NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the President of the Borough of The Bronx at the above office until 11 o'clock a. m., on

THURSDAY, JANUARY 10, 1907.

No. 1. FOR FURNISHING ALL LABOR AND MATERIALS REQUIRED FOR THE ERECTION AND COMPLETION OF AN OFFICE BUILDING TO BE ERECTED ON THE PLOT OF LAND SITUATED ON THE WEST SIDE OF OLINVILLE AVENUE, 100 FEET NORTH OF MAGENTA STREET, WILLIAMSBRIDGE, IN THE BOROUGH OF THE BRONX, NEW YORK CITY.

The time allowed for erecting and completing the work will be 150 days.

The amount of security required will be Twenty Thousand Dollars.

No. 2. FOR FURNISHING AND DELIVERING COAL TO THE BUREAU OF HIGHWAYS.

300 gross tons of white ash anthracite coal, egg size, to be delivered to yard of the Bureau of Highways, as required and directed during the year 1907.

The amount of security required will be One Thousand Dollars.

No. 3. FOR FURNISHING AND DELIVERING FORAGE TO THE BUREAU OF HIGHWAYS.

4,000 bushels No. 1 white clipped oats.
130,000 pounds timothy hay.
20,000 pounds rye straw.
4,000 pounds bran.
200 pounds oil meal.
400 pounds rock salt.

—to be delivered to stables of the Bureau of Highways as may be directed and required during the year 1907.

The amount of security required will be Fifteen Hundred Dollars.

No. 4. FOR FURNISHING AND DELIVERING COAL TO BUREAU OF PUBLIC BUILDINGS AND OFFICES.

300 gross tons of white ash anthracite coal, egg size.
50 gross tons of white ash anthracite coal, stove size.

—to be delivered at the Municipal Building, One Hundred and Seventy-seventh street and Third avenue, and to the various branch offices in the Borough of The Bronx, as may be directed and required during the year 1907.

The amount of security required will be Twelve Hundred Dollars.

No. 5. FOR FURNISHING AND DELIVERING 1,000 CUBIC YARDS OF BEST COW BAY PAVING SAND.

To be delivered to the yard of the Bureau of Highways as may be directed and required during the year 1907.

The amount of security required will be Five Hundred Dollars.

No. 6. FOR FURNISHING AND DELIVERING FORAGE TO THE BUREAU OF SEWERS.

1,000 bushels No. 1 white clipped oats.
40,000 pounds timothy hay.
4,000 pounds rye straw.
2,000 pounds bran.
100 pounds oil meal.
100 pounds common cob.
200 pounds lump rock salt.
50 pounds condition powder.
100 pounds table salt.

To be delivered to the stables of the Bureau of Sewers as may be directed and required during the year 1907.

The amount of security required will be Five Hundred Dollars.

No. 7. FOR REGULATING, GRADING, SETTING CURBSTONES, FLAGGING THE SIDEWALKS, LAYING CROSSWALKS, BUILDING APPROACHES AND PLACING FENCES IN BAINBRIDGE AVENUE, FROM MOSHOLU PARKWAY NORTH TO WOODLAWN ROAD.

The Engineer's estimate of the work is as follows:
1,900 cubic yards of earth excavation.
1,600 cubic yards of rock excavation.
4,000 cubic yards of filling.
900 linear feet of new curbstone, furnished and set.
3,600 square feet of new flagging, furnished and laid.
600 square feet of new bridgestone for crosswalks, furnished and laid.
40 cubic yards of dry rubble masonry, in retaining walls, culverts and gutters.

The time allowed for the completion of the work will be 75 working days.

The amount of security required will be Twenty-five Hundred Dollars.

No. 8. FOR CONSTRUCTING A SEWER AND APPURTENANCES IN VIREO AVENUE FROM EAST TWO HUNDRED AND THIRTY-FIFTH STREET TO EAST TWO HUNDRED AND THIRTY-SIXTH STREET.

The engineer's estimate of the work is as follows:
190 linear feet of pipe sewer, 12-inch.
23 spurs for house connections, over and above the cost per linear foot of sewer.
2 manholes, complete.
50 cubic yards of rock to be excavated and removed.
3 cubic yards of Class B concrete in place, additional to that shown on the plan.
1,000 feet (B. M.) of timber for foundations furnished and laid, and sheeting furnished and left in place.
10 linear feet of 12-inch drain pipe, furnished and laid.

The time allowed for the completion of the work will be 20 working days.

The amount of security required will be Five Hundred Dollars.

No. 9. FOR CONSTRUCTING A SEWER AND APPURTENANCES IN EAST ONE HUNDRED AND SEVENTY-NINTH STREET, BETWEEN ARTHUR AVENUE AND HUGHES AVENUE.

The engineer's estimate of the work is as follows:
238 linear feet of pipe sewer, 12-inch.
29 spurs for house connections, over and above the cost per linear foot of sewer.
3 manholes, complete.
225 cubic yards of rock to be excavated and removed.
10 cubic yards of Class B concrete in place, additional to that shown on the plan.
1,000 feet (B. M.) of timber for foundations furnished and laid, and sheeting furnished and left in place.
5 linear feet of 12-inch drain pipe, furnished and laid.

The time allowed for the completion of the work will be 35 working days.

The amount of security required will be Eight Hundred and Fifty Dollars.

No. 10. FOR CONSTRUCTING SEWER AND APPURTENANCES IN MOSHOLU PARKWAY NORTH, BETWEEN PERRY AVENUE AND JEROME AVENUE.

The engineer's estimate of the work is as follows:
570 linear feet of concrete sewer 3-feet 3-inch diameter.
1,285 linear feet of concrete sewer 2-feet 9-inch diameter.
14 linear feet of pipe sewer, 24-inch.
6 linear feet of pipe sewer, 18-inch.
730 linear feet of pipe sewer, 15-inch.
585 linear feet of pipe sewer, 12-inch.
211 spurs for house connections, over and above the cost per linear foot of sewer.
28 manholes, complete.
6,125 cubic yards of rock to be excavated and removed.
25 cubic yards of Class B concrete in place, additional to that shown on the plan.
175 cubic yards of rubble masonry in mortar, for foundations in place.
5,000 feet (B. M.) of timber for foundations furnished and laid and sheeting furnished and left in place.
100 linear feet of 12-inch drain pipe, furnished and laid.

The time allowed for the completion of the work will be 350 working days.

The amount of security required will be Nineteen Thousand Dollars.

Blank forms can be obtained upon application therefor, and the plans and specifications may be seen and other information obtained at said office.

LOUIS F. HAFFEN,
President.

d27,j10

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

BOARD OF ASSESSORS.

PUBLIC NOTICE IS HEREBY GIVEN TO the owner or owners of all houses and lots, improved or unimproved lands affected thereby, that the following proposed assessments have been completed and are lodged in the office of the Board of Assessors for examination by all persons interested, viz.:

BOROUGH OF BROOKLYN.

List 9013, No. 1. Sewer basin at the southwest corner of DeKalb avenue and Spencer court.

List 9023, No. 2. Laying cement sidewalks on the south side of Pacific street, between Howard and Saratoga avenues; on the west side of East Nineteenth street, between Cortelyou road and Dorchester road; on the north side of Dorchester road, between East Eighteenth and East Nineteenth streets; on the east side of East Sixteenth street, beetween Cortelyou and Dorchester roads; on the west side of East Seventeenth street, between Cortelyou and Dorchester roads; on the north side of Dorchester road, between Marlborough road (formerly East Fifteenth street) and East Sixteenth street; on the west side of East Sixteenth street, between Cortelyou and Dorchester roads; on the north side of Dorchester road between Rugby road (formerly East Fourteenth street) and Marlborough road (formerly East Fifteenth street); on the east side of Rugby road (formerly East Fourteenth street), between Cortelyou and Dorchester roads.

List 9024, No. 3. Fencing vacant lots on the northeast side of South Second street, between Keap and Hooper streets; on the east side of Oakland street, between Kent and Java streets; on the south side of Java street, between Oakland street and Provost street; on the east side of Oakland street, between Greenpoint avenue and Kent street; on the south side of Kent street, between Oakland and Provost streets; on the south side of Fourteenth street, between Eighth and Seventh avenues; on the north side of Fiftieth street, between Third and Fourth avenues; on the west side of Fifth avenue, between Forty-third and Forty-fourth streets; on the south side of Forty-third street and the north side of Forty-fourth street, between Fourth and Fifth avenues; and on the north side of Thirty-ninth street, between Third and Fourth avenues.

List 9040, No. 4. Sewer in Fort Hamilton avenue (Parkside avenue), between Flatbush and Ocean avenues.

List 9098, No. 5. Sewer in Eighth street, between Eighth avenue and Prospect Park West.

List 9099, No. 6. Sewer in East Thirty-fourth street, from Avenue G to Avenue H.

List 9101, No. 7. Sewer basin at the northwest corner of Oakland and Ash streets.

List 9109, No. 8. Sewer in Bay Nineteenth street, between Benson and Bath avenues.

List 9110, No. 9 Sewer in Beverley road, between East Twenty-second street and Bedford avenue

List 9111, No. 10. Sewer in Midwood street, between Nostrand and Rogers avenues.

List 9112, No. 11. Sewer basin at the northwest corner of Rochester avenue and Dean street.

List 9113, No. 12. Sewer in Bedford avenue, between North Thirteenth and North Fourteenth streets.

List 9133, No. 13. Laying cement sidewalks on the southwest side of Cropsey avenue, between Twenty-third and Twenty-fourth avenues; southwest side of Harway avenue, between Bay Fortieth and Bay Forty-first streets; between Bay Forty-first street and Twenty-sixth avenue; between Bay Forty-fourth street and Twenty-seventh avenue; between Twenty-seventh avenue and Bay Forty-sixth street, and between Bay Forty-sixth street and Bay Forty-eighth street.

List 9134, No. 14. Laying cement sidewalks on the north side of Hull street, between Hopkinson and Rockaway avenues; on the south side of St. John's place, between Albany and Troy avenues; on the south side of Bergen street, between Troy and Schenectady avenues; on the west side of Schenectady avenue, between Bergen street and St. Mark's avenue; on the east side of Washington avenue, between Sullivan and Malbone streets; between Washington place and Sullivan street, and between Montgomery street and Washington place; on the south side of Sumpter street, between Patchen and Ralph avenues; on the southeast side of Ralph avenue, between Knickerbocker and Myrtle avenues; on the east side of New Jersey avenue, between Fulton street and Atlantic avenue; on the southwest side of Knickerbocker avenue, between Bleecker and Ralph streets; on the northwest side of Ralph street, between Hamburg and Knickerbocker avenues; on the south side of Furman street, between Cranberry and Middagh streets (if extended), and on the north side of Sixteenth street, between Tenth and Eleventh avenues.

List 9135, No. 15. Laying cement sidewalks on the east side of Troy avenue, between Prospect place and Park place; on the east side of Troy avenue, between Park and Sterling places; also on the north side of Lincoln road, between Rogers and Bedford avenues; on the south side of St. Mark's avenue, between Classon and Franklin avenues; on the east side of Crystal street, between Pitkin and Belmont avenues; on the south side of Myrtle avenue, between Knickerbocker avenue and Bleecker street; on the northeast side of Knickerbocker avenue, between Myrtle avenue and Bleecker street.

List 9136, No. 16. Grading lots on the southeast side of Meeker avenue, between Stewart avenue and Gardner avenue, on Lots Nos. 1 to 6, inclusive, of Block 99, Eighteenth Ward.

The limits within which it is proposed to lay the said assessments include all the several houses and lots of ground, vacant lots, pieces and parcels of land situated on—

No. 1. Block bounded by Bedford avenue, Kosciusko street, Spencer court and DeKalb avenue.

No. 2. Southeast corner of Howard avenue and Pacific street; north side of Dorchester road, between Eighteenth and Nineteenth streets, Lot No. 39, Block 5161; northwest corner of Dorchester road and Sixteenth street; west side of Sixteenth street, between Dorchester road and Cortelyou road, Lots Nos. 51, 53, 55, 57, 59, 61, 63 and 66, Block 5159; southwest corner of Cortelyou road and Seventeenth street; north side of Dorchester road, between Marlborough road and Rugby road, Lots Nos. 37, 38 and 39, Block 5157; east side of Rugby road, between Dorchester and Cortelyou roads, Lot No. 54, Block 5157.

No. 3. North side of South Second street, between Keap and Hooper streets, Lot No. 36, Block 2412; southeast corner of Oakland and Java streets, Lots Nos. 5 and 10, Block 2552; southeast corner of Oakland and Kent streets, Lots Nos. 5, 6 and 7, Block 2560; south side of Fourteenth street, about 123 feet east of Seventh avenue, Lot No. 11, Block 1102; north side of Fiftieth street, between Third and Fourth avenues, Lots Nos. 56, 58 and 63 of Block 782; west side of Fifth avenue, from Forty-third to Forty-fourth street; north side of Thirty-ninth street, between Third and Fourth avenues, on Lots Nos. 51, 53 and 55 of Block 704.

No. 4. Both sides of Parkside avenue, from Ocean avenue to Flatbush avenue, and blocks bounded by Ocean avenue, Parkside avenue, Flatbush avenue and Fennimore street.

No. 5. Both sides of Eighth street, from Ninth avenue to Eighth avenue; east side of Eighth avenue and west side of Ninth avenue, from Seventh to Ninth street.

No. 6. Both sides of Thirty-fourth street, from Avenue G to Avenue H, and the north side of Avenue H, from New York avenue to East Thirty-fifth street.

No. 7. North side of Ash street, from Oakland street to Manhattan avenue.

No. 8. Both sides of Bay Nineteenth street, from Bath to Benson avenue, and east side of Eighteenth avenue, from Bath to Benson avenue.

No. 9. Triangle bounded by Tilden avenue, Bedford avenue and Beverley road; south side of Beverley road, from East Twenty-second street to Bedford avenue; both sides of Twenty-second street, from Beverley road to Tilden avenue; north side of Beverley road and south side of Tilden avenue, from Twenty-second to Twenty-third street.

No. 10. Both sides of Midwood street, from Rogers to Nostrand avenue.

No. 11. North side of Dean street, from Rochester to Utica avenue.

No. 12. Both sides of Bedford avenue, between North Thirteenth and North Fourteenth streets.

No. 13. West side of Cropsey avenue, between Twenty-third and Twenty-fourth avenues, Lots Nos. 22 and 28, Block 1018a; south side of Harway avenue, between Bay Fortieth street and Bay Forty-seventh street, affecting the following lots: Lot No. 6 of Block 1023; Lot No. 34 of Block 1062; Lots Nos. 23 and 24 of Block 1059; Lots Nos. 8, 9, 10, 11, 13 and 28 of Block 1058; Lots Nos. 12, 13, 14 and 15 of Block 1057, and Lots Nos. 1 and 2 of Block 1056.

No. 14. North side of Hull street, between Rockaway and Hopkinson avenues, Lot No. 47, Block 1533; south side of St. John's place, between Troy and Albany avenues, Lots Nos. 9, 20 and 35, Block 1382; south side of Bergen street, between Schenectady and Troy avenues, Lots Nos. 29 and 32, Block 1353; east side of Washington avenue, from Washington place to Malbone street, and from Washington place to Montgomery street; south side of Sumpter street, 100 feet west of Ralph avenue, Lot No. 29, Block 1698; south side of Ralph street, between Knickerbocker and Myrtle avenues, Lots Nos. 12 to 15 inclusive on Block 3317; northeast corner of New Jersey avenue and Atlantic avenue; southwest corner of Knickerbocker avenue and Ralph street; east side of Furman street, 102 feet south of Middagh street, Lots Nos. 4 and 5, Block 213, and northeast side of Sixteenth street, between Tenth and Eleventh avenues, on Lots Nos. 62, 63, 64 and 66 of Block 1107.

No. 15. East side of Troy avenue, between Prospect place and Sterling place; northeast corner of Lincoln road and Rogers avenue; south side of St. Mark's avenue, between Classon and Franklin avenues, Lot No. 12, Block 1156; southeast corner of Pitkin avenue and Crystal street, and the triangle bounded by Bleecker street, Knickerbocker and Myrtle avenues.

No. 16. Southeast side of Meeker avenue, between Stewart and Gardner avenues, on Block 2797, Lots Nos. 2, 6 and 9.

All persons whose interests are affected by the above named proposed assessments, and who are opposed to the same, or either of them, are requested to present their objections, in writing, to the Secretary of the Board of Assessors, No. 320 Broadway, New York, on or before February 5, 1907, at 11 a. m., at which time and place the said objections will be heard and testimony received in reference thereto.

ANTONIO ZUCCA,
PAUL WEIMANN,
JAMES H. KENNEDY,
Board of Assessors.

WILLIAM H. JASPER,
Secretary.
No. 320 Broadway.

City of New York, Borough of Manhattan, December 27, 1906.

d27,j8

PUBLIC NOTICE IS HEREBY GIVEN TO the owner or owners of all houses and lots, improved or unimproved lands affected thereby, that the following proposed assessments have been completed and are lodged in the office of the Board of Assessors for examination by all persons interested, viz.:

BOROUGH OF THE BRONX.

List 8952, No. 1. Regulating, curbing, flagging, laying crosswalks, building approaches and placing fences in Morris avenue, from the east side of the New York and Harlem Railroad to the Grand Boulevard and Concourse.

List 8986, No. 2. Sewer and appurtenances in Ryer avenue, between Burnside avenue and East One Hundred and Eighty-third street, with branches in East One Hundred and Eightieth street, from Ryer avenue to Anthony avenue; in Anthony avenue, from East One Hundred and Eightieth street to the Concourse, and on the east side of the Concourse, from Anthony avenue to East One Hundred and Eighty-third street.

The limits within which it is proposed to lay the said assessments include all the several houses and lots of ground, vacant lots, pieces and parcels of land situated on—

No. 1. Both sides of Morris avenue, from its intersection with Park avenue at One Hundred and Fifty-sixth street to the Grand Boulevard and Concourse, and to the extent of half the block at the intersecting and terminating streets and avenues.

No. 2. Both sides of Ryer avenue, from Burnside avenue to East One Hundred and Eighty-third street; both sides of Anthony avenue, from One Hundred and Eightieth to One Hundred and Eighty-first street; east side of the Grand Boulevard and Concourse, from One Hundred and Eighty-first to One Hundred and Eighty-third street; north side of One Hundred and Eightieth street, from the Concourse to Anthony avenue; south side of One Hundred and Eighty-third street, from the Concourse to Ryer avenue; both sides of One Hundred and Eightieth street, from Ryer avenue to Anthony avenue.

All persons whose interests are affected by the above named proposed assessments, and who are opposed to the same, or either of them, are requested to present their objections, in writing, to the Secretary of the Board of Assessors, No. 320 Broadway, New York, on or before January 29, 1907, at 11 a. m., at which time and place the said objections will be heard and testimony received in reference thereto.

ANTONIO ZUCCA,
PAUL WEIMANN,
JAMES H. KENNEDY,
Board of Assessors.

WILLIAM H. JASPER,
Secretary,
No. 320 Broadway.

City of New York, Borough of Manhattan, December 24, 1906.

d24,j5

PUBLIC NOTICE IS HEREBY GIVEN TO the owner or owners of all houses and lots, improved or unimproved lands affected thereby, that the following proposed assessments have been completed and are lodged in the office of the Board of Assessors for examination by all persons interested, viz.:

BOROUGH OF MANHATTAN.

List 9086, No. 1. Paving West One Hundred and Twenty-first street, from Amsterdam avenue to Broadway, with sheet asphalt, curbing and recurbing.

List 9085, No. 2. Repairing sidewalk in front of No. 874 Third avenue.

List 9084, No. 3. Repairing sidewalk at No. 354 East Thirty-second street.

List 9083, No. 4. Repairing sidewalk at No. 320 East Thirty-second street.

List 9082, No. 5. Repairing sidewalk at No. 137 East Thirty-first street.

List 9081, No. 6. Repairing sidewalk in front of Nos. 1011 and 1013 Park avenue.

List 9080, No. 7. Repairing sidewalk on the southwest corner of One Hundred and Thirty-fourth street and Park avenue.

List 9079, No. 8. Repairing sidewalk at the northeast corner of Lexington avenue and One Hundred and Seventh street.

List 9078, No. 9. Repairing sidewalk in front of No. 223 East One Hundred and Sixth street.

List 9077, No. 10. Repairing sidewalk on the southwest corner of Eighty-fifth street and Lexington avenue.

List 9076, No. 11. Repairing sidewalk at the northeast corner of Eighty-second street and Fifth avenue.

List 9075, No. 12. Repairing sidewalk at No. 309 East Fourteenth street.

List 9074, No. 13. Repairing sidewalk at No. 587 First avenue.

List 9073, No. 14. Fencing vacant lots in front of Nos. 223 to 229 West Sixty-ninth street.

List 9072, No. 15. Fencing vacant lots at Nos. 140 to 152 West Sixty-third street.

List 9071, No. 16. Fencing vacant lots on the north side of West One Hundred and Seventy-first street, 125 feet west of Amsterdam avenue.

List 9070, No. 17. Fencing vacant lots on the south side of West One Hundred and Thirty-eighth street, from Seventh avenue to a point 550 feet easterly.

List 9069, No. 18. Fencing vacant lots on the north side of One Hundred and Thirty-fourth street, beginning 10 feet west of Madison avenue.

List 9068, No. 19. Fencing vacant lots on the south side of One Hundred and Thirty-fourth street, beginning 110 feet east of Madison avenue.

List 9067, No. 20. Fencing vacant lots at the southwest corner of One Hundred and Thirty-fourth street and Park avenue.

List 9120, No. 21. Paving West One Hundred and Thiry-ninth street, between Fifth and Lenox avenues, with sheet asphalt, curbing and recurbing.

List 9119, No. 22. Paving West One Hundred and Thirty-sixth street, from Broadway to Riverside drive, with sheet asphalt on a concrete foundation, curbing, recurbing and providing necessary manhole covers.

List 9118, No. 23. Receiving basin on the northwest corner of One Hundred and Thirty-fifth street and Lenox avenue.

The limits within which it is proposed to lay the said assessments include all the several houses and lots of ground, vacant lots, pieces and parcels of land situated on—

No. 1. Both sides of One Hundred and Twenty-first street, from Broadway to Amsterdam avenue, and to the extent of half the block at the intersecting avenues.

No. 2. Southwest corner of Third avenue and Fifty-third street.

No. 3. South side of Thirty-second street, between First and Second avenues, on Block 937, Lot No. 40.

No. 4. South side of Thirty-second street, between First and Second avenues, on Block 937, Lot No. 57.

No. 5. North side of Thirty-first street, between Third and Lexington avenues, on Block 887, Lot No. 31.

No. 6. East side of Park avenue, about 25 feet 6½ inches south of Eighty-fifth street, and running southerly about 50 feet, on Block 1513, Lot Nos. 70 and 71.

No. 7. Beginning at the southwest corner of One Hundred and Thirty-fourth street and Park avenue, and running westerly on One Hundred and Thirty-fourth street for a distance of 140 feet, and running southerly on Park avenue for a distance of 99 feet 11 inches, on Block 1758, Lot Nos. 37 to 42, inclusive.

No. 8. Northeast corner of Lexington avenue and One Hundred and Seventh street.

No. 9. North side of One Hundred and Sixth street, between Second and Third avenues, on Block 1656, Lot No. 12.

No. 10. Southwest corner of Eighty-fifth street and Lexington avenue.

No. 11. Beginning at the northeast corner of Eighty-second street and Fifth avenue, and extending easterly a distance of 160 feet, Block 1494, Lot Nos. 1, 5 and 6.

No. 12. North side of Fourteenth street, between First and Second avenues, on Block 921, Lot No. 7.

No. 13. West side of First avenue, between Thirty-third and Thirty-fourth streets, on Block 939, Lot No. 34.

No. 14. North side of Sixty-ninth street, beginning at a point 265 feet west of its intersection with Amsterdam avenue, and extending 80 feet westerly, on Block 1161, Lot No. 19.

No. 15. South side of Sixty-third street, between Amsterdam and Columbus avenues, on Block 1134, Lots Nos. 56 to 60, inclusive.

No. 16. North side of One Hundred and Seventy-first street, between Amsterdam and Audubon avenues, on Block 2128, Lot Nos. 29, 58 and 57.

No. 17. Beginning at the southeast corner of One Hundred and Thirty-eighth street and Seventh avenue, and extending about 200 feet easterly, on Block 2006, Lots Nos. 56 to 61, inclusive.

No. 18. North side of One Hundred and Thirty-fourth street, commencing 10 feet west of Madison avenue and extending 60 feet westerly, on Block 1759, Lot Nos. 15, 16 and 16½.

No. 19. South side of One Hundred and Thirty-fourth street, beginning at a point 110 feet east of Madison avenue, and extending 75 feet easterly, on Block 1758, Lots Nos. 46, 47 and 48.

No. 20. Beginning at the southwest corner of Park avenue and One Hundred and Thirty-fourth street, and extending southerly on Park avenue for a distance of 99 feet 11 inches, and running westerly on One Hundred and Thirty-fourth street for a distance of 140 feet, on Block 1758, Lots Nos. 37 to 42, inclusive.

No. 21. Both sides of One Hundred and Thirty-ninth street, from Fifth to Lenox avenue, and to the extent of half the block at the intersecting avenues.

No. 22. Both sides of One Hundred and Thirty-sixth street, from Broadway to Riverside drive, and to the extent of half the block at the intersecting and terminating streets.

No. 23. North side of One Hundred and Thirty-fifth street, from a point 75 feet east of Seventh avenue to Lenox avenue.

All persons whose interests are affected by the above-named proposed assessments, and who are opposed to the same, or either of them, are requested to present their objections, in writing, to the Secretary of the Board of Assessors, No. 320 Broadway, New York, on or before January 22, 1907, at 11 a. m., at which time and place the said objections will be heard and testimony received in reference thereto.

ANTONIO ZUCCA,
PAUL WEIMANN,
JAMES H. KENNEDY,
Board of Assessors.

WILLIAM H. JASPER,
Secretary,
No. 320 Broadway.

City of New York, Borough of Manhattan, December 20, 1906.

d20,j2

MUNICIPAL CIVIL SERVICE COMMISSION.

MUNICIPAL CIVIL SERVICE COMMISSION, No. 51 LAFAYETTE STREET, NEW YORK CITY, December 24, 1906.

PUBLIC NOTICE IS HEREBY GIVEN that applications for the following position in the Labor Class will be received on and after

WEDNESDAY, JANUARY 2, 1907

viz.:

LABOR CLASS, PART II.
NICKEL PLATER, in the Fire Department.

WILLIAM F. BAKER,
President;
R. ROSS APPLETON,
ALFRED J. TALLEY,
Civil Service Commissioners.

FRANK A. SPENCER,
Secretary.

d27,j2

MUNICIPAL CIVIL SERVICE COMMISSION, No. 299 BROADWAY, NEW YORK, December 26, 1906.

PUBLIC NOTICE IS HEREBY GIVEN that applications will be received until 4 p. m.,

WEDNESDAY, JANUARY 2, 1907

for the position of
BOOKKEEPER, FOURTH GRADE (MEN ONLY).

The examination will be held on Tuesday, January 15, 1907, at 10 a. m.

The subjects and weights of the examination are as follows:

Special paper	6
Arithmetic	3
Handwriting and neatness	1

The percentage required is 75 on the technical paper, and 70 on all.

There are eight vacancies in the Department of Finance.

The salary is $1,200 per annum.

The minimum age is 21 years.

FRANK A. SPENCER,
Secretary.

d26,j15

MUNICIPAL CIVIL SERVICE COMMISSION, No. 299 BROADWAY, NEW YORK, December 26, 1906.

PUBLIC NOTICE IS HEREBY GIVEN that applications will be received until 4 p. m.,

THURSDAY, JANUARY 3, 1907

for the position of
MARINE ENGINEER.

The examination will be held on Thursday, January 17, 1907, at 10 a. m.

The subjects and weights of the examination are as follows:

Technical	6
Mathematics	1
Experience	3

The percentage required is 75 on technical paper and 70 on all.

There are three vacancies.

The salary is $1,200 per annum.

The minimum age is 21 years.

FRANK A. SPENCER,
Secretary.

d26,j17

MUNICIPAL CIVIL SERVICE COMMISSION, No. 299 BROADWAY, NEW YORK, December 26, 1906.

PUBLIC NOTICE IS HEREBY GIVEN that applications will be received until 4 p. m.,

FRIDAY, JANUARY 4, 1907

for the position of
COURT ATTENDANT.
(Municipal and Magistrates' Courts, Queens and Richmond Boroughs only.)

The examination will be held on Thursday, January 24, 1907, at 10 a. m.

The subjects and weights of the examination are as follows:

Duties	5
Arithmetic	2
Experience	3

The percentage required is 70.

A physical examination will precede the mental.

Candidates must be residents of the boroughs in which they serve.

There is one vacancy at present.

The minimum age is 21 years.

FRANK A. SPENCER,
Secretary.

d26,j4

MUNICIPAL CIVIL SERVICE COMMISSION, No. 299 BROADWAY, NEW YORK, December 22, 1906.

PUBLIC NOTICE IS HEREBY GIVEN OF the proposed amendment of Civil Service Rule XII., paragraph 6, so as to read as follows:

"6. The Commission may, by resolution, except from competitive examination any person engaged in private business who shall render any professional, scientific, technical or expert service of an occasional and exceptional character to any city officer, and the amount of whose compensation in any one year shall not exceed $1,000; provided that such limitation of compensation shall not apply to any person so employed by the Mayor or Corporation Counsel; and provided further that the Commission may, by resolution, approved by the Mayor and the State Civil Service Commission, suspend such limitation in other cases."

A public hearing will be held on the proposed amendment at the Commission's offices, No. 299 Broadway, on Thursday, December 27, 1906, at ten o'clock in the forenoon, in accordance with the provisions of Civil Service Rule III.

FRANK A. SPENCER,
Secretary.

d22,27

MUNICIPAL CIVIL SERVICE COMMISSION, No. 299 BROADWAY, NEW YORK, December 17, 1906.

PUBLIC NOTICE IS HEREBY GIVEN that applications will be received until 4 p. m.,

MONDAY, JANUARY 14, 1906,

for the position of
BACTERIOLOGIST (MALE AND FEMALE).

The examination will be held on Tuesday, January 22, 1907, at 10 a. m.

The subjects and weights of the examination are as follows:

Technical	6
Experience	4

The percentage required is 75 on the technical paper and 70 on all.

Candidates are expected to have taken a course in bacteriology in some medical college of recognized standing, and also to have had some actual experience in a reputable bacteriological laboratory.

The salary is $1,200 per annum.

There are two vacancies in the Department of Water Supply, Gas and Electricity.

Certification will also be made to the Department of Health.

The minimum age is 21 years.

FRANK A. SPENCER,
Secretary.

d17,31

MUNICIPAL CIVIL SERVICE COMMISSION, No. 299 BROADWAY, NEW YORK, December 17, 1906.

PUBLIC NOTICE IS HEREBY GIVEN that applications will be received until 4 p. m.,

MONDAY, JANUARY 7, 1907

for the position of
INSPECTOR OF FILTER PLANTS.

The examination will be held on Wednesday, January 23, 1907, at 10 a. m.

The subjects and weights of the examination are as follows:

Technical	5
Experience	2
Mathematics	1
Report	2

The percentage required is 75 on the technical paper and 70 on all.

The salary is $1,200 per annum.

There are two vacancies in the Department of Water Supply, Gas and Electricity.

The minimum age is 21 years.

FRANK A. SPENCER,
Secretary.

d17,j10

MUNICIPAL CIVIL SERVICE COMMISSION, No. 299 BROADWAY, NEW YORK, December 22, 1906.

PUBLIC NOTICE IS HEREBY GIVEN that the time for receiving applications for the position of INSPECTOR OF FILTER PLANTS has been extended until Monday, January 7, 1907, 4 p. m.

A new date for the examination will be announced in the regular advertisement.

FRANK A. SPENCER,
Secretary.

MUNICIPAL CIVIL SERVICE COMMISSION, No. 299 BROADWAY, NEW YORK, December 7, 1906.

PUBLIC NOTICE IS HEREBY GIVEN that applications will be received until 4 P. M., FRIDAY, DECEMBER 14, 1906, for the position of

INTERPRETER (RUSSIAN, POLISH AND YIDDISH).

The examination will be held on Friday, December 28, 1906, at 10 a. m.
The subjects and weights of the examination are as follows:

Oral	4
Written	4
Letter-writing (English)	2

The percentage required is 70 on all.
Candidates will be examined in Russian, Polish and Yiddish. Candidates must qualify in two languages besides English.
The minimum age is 21 years.
The salary is $1,000 to $1,200 per annum.
There is one vacancy.

FRANK A. SPENCER,
Secretary.
d8,28

MUNICIPAL CIVIL SERVICE COMMISSION, No. 299 BROADWAY, NEW YORK, November 26, 1906.

PUBLIC NOTICE IS HEREBY GIVEN that applications will be received until 4 p. m.,

MONDAY, DECEMBER 10, 1906

for the position of
INSPECTOR OF FOODS (MILK ONLY), DEPARTMENT OF HEALTH.
The examination will be held on Thursday, December 27, 1906, at 10 a. m.
The subjects and weights of the examination are as follows:

Technical	6
Experience	2
Arithmetic	1
Report	1

The percentage required is 75 on the technical paper and 70 on all.
Candidates will be called upon to pass judgment on samples of milk submitted to them at the time of examination.
There is one vacancy.
The salary is $1,200 per annum.
The minimum age is 21 years.

FRANK A. SPENCER,
Secretary.
n24,d27

MUNICIPAL CIVIL SERVICE COMMISSION, No. 51 LAFAYETTE STREET, NEW YORK CITY, October 22, 1906.

PUBLIC NOTICE IS HEREBY GIVEN *that applications for the following position* in the Labor Class will be received on and after

THURSDAY, NOVEMBER 1, 1906

viz.:

LABOR CLASS—Part 2.
BRASS FINISHER.

WILLIAM F. BAKER,
President;
R. ROSS APPLETON,
ALFRED J. TALLEY,
Civil Service Commissioners.

FRANK A. SPENCER,
Secretary.

MUNICIPAL CIVIL SERVICE COMMISSION, No. 299 BROADWAY, CITY OF NEW YORK.

PUBLIC NOTICE WILL BE GIVEN OF all competitive examinations two weeks in advance of the date upon which the receipt of applications for any scheduled examination will close. Applications will be received for only such examinations as are scheduled.
When an examination is advertised, a person desiring to compete in the same may obtain an application blank upon request made in writing or by personal application at the office of the Commission.
All notices of examinations will be posted in the office of the Commission, City Hall, Municipal Building, Brooklyn, and advertised in the CITY RECORD for two weeks in advance of the date upon which the receipt of applications will close for any stated position.
Public notice will also be given by advertisement in most of the City papers.
Wherever an examination is of a technical character, due notice is given by advertisement in the technical journals appertaining to the particular profession for which the examination is called.
Such notices will be sent to the daily papers as matters of news, and to the General Post-office and stations thereof. The scope of the examination will be stated, but for more general information application should be made at the office of the Commission.
Unless otherwise specifically stated, the minimum age requirement for all positions is 21.

WILLIAM F. BAKER,
President;
R. ROSS APPLETON,
ALFRED J. TALLEY,
Commissioners.

FRANK A. SPENCER,
Secretary.
12-24-03

DEPARTMENT OF PUBLIC CHARITIES.

DEPARTMENT OF PUBLIC CHARITIES, FOOT OF EAST TWENTY-SIXTH STREET, NEW YORK.

BOROUGHS OF BROOKLYN AND QUEENS.

TO CONTRACTORS.

PROPOSALS FOR BIDS OR ESTIMATES.

SEALED BIDS OR ESTIMATES WILL BE received by the Department of Public Charities at the above office until 2.30 o'clock p. m., on

WEDNESDAY, JANUARY 9, 1907.

FOR FURNISHING ALL THE LABOR AND MATERIALS REQUIRED TO REMOVE THE PRESENT WOODEN STAIRS, ETC., AND TO ERECT A PASSENGER ELEVATOR AND FIREPROOF STAIRWAY IN THE CENTRAL PORTION OF THE MALE ALMSHOUSE AT THE KINGS COUNTY HOSPITAL, BOROUGH OF BROOKLYN.
The time allowed for the completion of the work and full performance of the contract is sixty-five (65) consecutive working days.
The surety required will be Ten Thousand Dollars ($10,000).
The bidder will state one aggregate price for the whole work described and specified, as the contract is entire for a complete job.
Blank forms and further information may be obtained at the office of the Architect of the Department, foot of East Twenty-sixth street, Borough of Manhattan, The City of New York, where plans and specifications may be seen.

ROBERT W. HEBBERD,
Commissioner.
Dated December 24, 1906.
d26,j9

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

DEPARTMENT OF PUBLIC CHARITIES, FOOT OF EAST TWENTY-SIXTH STREET, NEW YORK.

TO CONTRACTORS.

PROPOSALS FOR BIDS OR ESTIMATES.

SEALED BIDS OR ESTIMATES WILL BE received by the Department of Public Charities at the above office until 2.30 o'clock p. m. on

MONDAY, JANUARY 7, 1907.

FOR FURNISHING AND DELIVERING DRY GOODS, METAL LOCKERS AND FILING CABINETS.
The time for the performance of the contract is during the year 1907.
The amount of security required is fifty (50) per cent. of the amount of the bid or estimate.
The bidder will state the price, per yard or other designated unit, by which the bids will be tested. The extensions must be made and footed up, as the bids will be read from the total and awards made to the lowest bidder on each line or item, as stated in the specifications.
Blank forms and further information may be obtained at the office of the Department, foot of East Twenty-sixth street, Borough of Manhattan.

ROBERT W. HEBBERD,
Commissioner.
The City of New York, December 24, 1906.
d26,j7

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

DEPARTMENT OF PUBLIC CHARITIES, FOOT OF EAST TWENTY-SIXTH STREET, NEW YORK.

TO CONTRACTORS.

PROPOSALS FOR BIDS OR ESTIMATES.

SEALED BIDS OR ESTIMATES WILL BE received by the Department of Public Charities at the above office until 2.30 o'clock p. m. on

MONDAY, JANUARY 7, 1907.

FOR FURNISHING AND DELIVERING FRESH MEATS, FRESH FISH, FRESH MILK, POULTRY, COAL AND ICE.
The time for the performance of the contract is during the year 1907.
The amount of security required is fifty (50) per cent. of the amount of the bid or estimate, except on bids for ice, for which a bond of one hundred (100) per cent. will be required.
Deliveries to be made at the New York City Farm Colony, Borough of Richmond.
The bidder will state the price per pound, per quart, per ton, or other designated unit, by which the bids will be tested. The extensions must be made and footed up, as the bids will be read from the total and awards made to the lowest bidder on each line or item, as stated in the specifications.
Blank forms and further information may be obtained at the office of the Department, foot of East Twenty-sixth street, Borough of Manhattan, or at the New York City Farm Colony, Borough of Richmond.

ROBERT W. HEBBERD,
Commissioner.
The City of New York, December 21, 1906.
d21,j7

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

DEPARTMENT OF PUBLIC CHARITIES, FOOT OF EAST TWENTY-SIXTH STREET, NEW YORK.

TO CONTRACTORS.

PROPOSALS FOR BIDS OR ESTIMATES.

SEALED BIDS OR ESTIMATES WILL BE received by the Department of Public Charities at the above office until 2.30 o'clock p. m. on

THURSDAY, JANUARY 3, 1907.

FOR FURNISHING AND DELIVERING POULTRY.
The time for the performance of the contract is during the year 1907.
The amount of security required is fifty (50) per cent. of the amount of the bid or estimate.
The bidder will state the price, per pound, by which the bids will be tested. The extensions must be made and footed up, as the bids will be read from the total and awards made to the lowest bidder on each line or item, as stated in the specifications.
Blank forms and further information may be obtained at the office of the Department, foot of East Twenty-sixth street, Borough of Manhattan.

ROBERT W. HEBBERD,
Commissioner.
The City of New York, December 21, 1906.
d21,j3

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

DEPARTMENT OF PUBLIC CHARITIES, FOOT OF EAST TWENTY-SIXTH STREET, NEW YORK.

TO CONTRACTORS.

PROPOSALS FOR BIDS OR ESTIMATES.

SEALED BIDS OR ESTIMATES WILL BE received by the Department of Public Charities at the above office until 2.30 o'clock p. m. *on*

WEDNESDAY, JANUARY 2, 1907.

FOR FURNISHING AND DELIVERING FIFTY-EIGHT HUNDRED AND FIFTY (5,850) TONS OF ICE.
The time for the performance of the contract is during the year 1907.
The amount of security required is one hundred per cent. (100%) of the amount of the bid or estimate.
The bidder will state the price, per ton, by which the bids will be tested. The extensions must be made and footed up, as the bids will be read from the total and awards made to the lowest bidder on each line or item, as stated in the specifications.
Blank forms and further information may be obtained at the office of the Department, foot of East Twenty-sixth street, Borough of Manhattan.

ROBERT W. HEBBERD,
Commissioner.
The City of New York, December 20, 1906.
d20,j2

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

DEPARTMENT OF PUBLIC CHARITIES, FOOT OF EAST TWENTY-SIXTH STREET, NEW YORK.

TO CONTRACTORS.

PROPOSALS FOR BIDS OR ESTIMATES.

SEALED BIDS OR ESTIMATES WILL BE received by the Department of Public Charities at the above office until 2.30 o'clock p. m. on

WEDNESDAY, JANUARY 2, 1907.

FOR FURNISHING ALL THE LABOR AND MATERIALS REQUIRED FOR THE ERECTION AND COMPLETION OF TWO NEW ISOLATION PAVILIONS ON RANDALL'S ISLAND.
The time allowed for the completion of the work and full performance of the contract is seventy-five (75) consecutive working days.
The security required will be Four Thousand Dollars ($4,000).
The bidder will state one aggregate price for the whole work described and specified, as the contract is entire for a complete job.
Blank forms and further information may be obtained at the office of the Architect of the Department, foot of East Twenty-sixth street, The City of New York, where plans and specifications may be seen.

ROBERT W. HEBBERD,
Commissioner.
Dated December 20, 1906.
d20,j2

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

OFFICIAL BOROUGH PAPERS.

BOROUGH OF THE BRONX.

"North Side News," "Harlem Reporter and Bronx Chronicle," "Bronx Sentinel."

BOROUGH OF RICHMOND.

"Staten Islander," "Staten Island Star."

BOROUGH OF QUEENS.

"Long Island Star" (First and Second Wards), "Flushing Evening Journal" (Third Ward), "Long Island Farmer" (Fourth Ward), "Rockaway News" (Fifth Ward).

BOROUGH OF BROOKLYN.

"Brooklyn Eagle," "Brooklyn Times," "Brooklyn Citizen," "Brooklyn Standard-Union," "Brooklyner Freie Presse."

BOROUGH OF MANHATTAN.

"Democracy," "Tammany Times" (Harlem District), "Manhattan and Bronx Advocate" (Washington Heights, Morningside Heights and Harlem Districts).
Designated by Board of City Record June 19, 1906.
Amended June 20, 1906.

DEPARTMENT OF PARKS.

OFFICE OF THE DEPARTMENT OF PARKS, ARSENAL BUILDING, FIFTH AVENUE AND SIXTY-FOURTH STREET, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Park Board at the above office of the Department of Parks until 3 o'clock p. m. on

THURSDAY, JANUARY 3, 1907.
Borough of Brooklyn.

FOR FURNISHING AND DELIVERING STOVE, EGG AND BLACKSMITH COAL IN PARKS AND PARKWAYS, BOROUGHS OF BROOKLYN AND QUEENS.
The time allowed for the completion of the contract is on or before December 31, 1907.
The amount of security required is Six Thousand Dollars ($6,000).
The bids will be compared and the contract awarded at a lump or aggregate sum.
Blank forms may be obtained at the office of the Department of Parks, Litchfield Mansion, Prospect Park, Brooklyn.

MOSES HERRMAN,
President;
JOSEPH I. BERRY,
MICHAEL J. KENNEDY,
Commissioners of Parks.
Dated December 19, 1906.
d20,j3

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

OFFICE OF THE DEPARTMENT OF PARKS, ARSENAL BUILDING, FIFTH AVENUE AND SIXTY-FOURTH STREET, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Park Board at the above office of the Department of Parks until 3 o'clock p. m. on

THURSDAY, DECEMBER 27, 1906.
Borough of Manhattan.

No. 1. FOR CONSTRUCTING A PIPE SEWER AND APPURTENANCES FROM THE COTTAGE SOUTH OF THE SEVENTY-NINTH STREET TRANSVERSE ROAD NEAR THE EAST DRIVE TO THE BRICK SEWER IN THE SAID TRANSVERSE ROAD NEAR FIFTH AVENUE, FOR CONNECTING THE SAID COTTAGE BY MEANS OF WROUGHT IRON PIPES WITH THE CROTON MAIN IN SAID TRANSVERSE ROAD AND FOR BUILDING BRICK MANHOLES ON EXISTING BRICK SEWERS IN THE VICINITY OF THE PROPOSED SEWER, ALL IN CENTRAL PARK.
The time allowed for doing and completing the work will be fifty consecutive working days.
The amount of the security required will be Thirty-five Hundred Dollars.
No. 2. FOR CONSTRUCTING THAT PORTION OF ST. NICHOLAS PARK SOUTH OF ONE HUNDRED AND THIRTY-FIFTH STREET.
The time allowed for the completion of the whole work will be one hundred and seventy-five consecutive working days.
The amount of the security required is Forty-five Thousand Dollars.
The bids will be compared and the contracts awarded at a lump or agregate sum for each contract.
Plans may be seen and blank forms may be obtained at the office of the Department of Parks, Arsenal, Central Park, Manhattan.

MOSES HERRMAN,
President;
JOSEPH I. BERRY,
MICHAEL J. KENNEDY,
Commissioners of Parks.
Dated December 14, 1906.
d15,27

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

OFFICE OF THE DEPARTMENT OF PARKS, ARSENAL BUILDING, FIFTH AVENUE AND SIXTY-FOURTH STREET, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Park Board at the above office of the Department of Parks until 3 o'clock p. m. on

THURSDAY, DECEMBER 27, 1906.
Borough of Manhattan.

No. 1. FOR FURNISHING AND DELIVERING FORAGE.
The time for the delivery of the materials and the performance of the contract is as required before July 1, 1907.
The amount of security required is Five Thousand Dollars.
No. 2. FOR FURNISHING AND DELIVERING COAL.
The time for the delivery of the materials and the performance of the contract is as required before July 1, 1907.
The amount of security required is Five Thousand Dollars.
No. 3. FOR FURNISHING AND DELIVERING BEEF FOR THE CENTRAL PARK MENAGERIE.
The time for the delivery of the materials and the performance of the contract is as required before July 1, 1907.
The amount of security required is Nine Hundred Dollars.
The contracts must be bid for separately. The bids will be compared and the contracts awarded at a lump or aggregate sum for each contract.
Blank forms may be obtained at the office of the Department of Parks, Arsenal, Central Park, Manhattan.

MOSES HERRMAN,
President;
JOSEPH I. BERRY,
MICHAEL J. KENNEDY,
Commissioners of Parks.
Dated December 11, 1906.
d14,27

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

OFFICE OF THE DEPARTMENT OF PARKS, ARSENAL BUILDING, FIFTH AVENUE AND SIXTY-FOURTH STREET, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Park Board at the above office of the Department of Parks until 3 o'clock p. m. on

THURSDAY, DECEMBER 27, 1906.
Borough of Brooklyn.

FOR FURNISHING AND DELIVERING FRESH BEEF AND FISH AT THE MENAGERIE, PROSPECT PARK.
The time allowed for the completion of the contract is on or before December 31, 1907.
The amount of security required is One Thousand Dollars.
The bids will be compared and the contract awarded at a lump or aggregate sum.
Blank forms may be obtained at the office of the Department of Parks, Litchfield Mansion, Prospect Park, Brooklyn.

MOSES HERRMAN,
President;
JOSEPH I. BERRY,
MICHAEL J. KENNEDY,
Commissioners of Parks.
d11,27

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

DEPARTMENT OF EDUCATION.

DEPARTMENT OF EDUCATION, CORNER OF PARK AVENUE AND FIFTY-NINTH STREET, BOROUGH OF MANHATTAN, CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Superintendent of School Buildings at the above office of the Department of Education until 11 o'clock a. m. on

MONDAY, JANUARY 7, 1907.
Borough of Brooklyn.

No. 1. FOR THE GENERAL CONSTRUCTION, ETC., OF NEW PUBLIC SCHOOL 155, ON THE NORTHWEST CORNER OF HERKIMER STREET AND EASTERN PARKWAY, BOROUGH OF BROOKLYN.
The time allowed to complete the whole work will be 300 working days, as provided in the contract.
The amount of security required is One Hundred and Fifty Thousand Dollars ($150,000).
No. 2. FOR THE GENERAL CONSTRUCTION, ETC., OF ADDITIONAL LABORATORY FITTINGS, ETC., IN THE COMMERCIAL HIGH SCHOOL, ON THE WESTERLY SIDE OF ALBANY AVENUE, BETWEEN BERGEN AND DEAN STREETS, BOROUGH OF BROOKLYN.
The time of completion is 60 working days.
The amount of security required is One Thousand Dollars ($1,000).
On Contracts Nos. 1 and 2 the bids will be compared and the contract awarded in a lump sum to the lowest bidder on each contract.
Blank forms, plans and specifications may be obtained or seen at the office of the Superintendent, at Estimating Room, ninth floor, Hall of the Board of Education, Park avenue and Fifty-ninth street, Borough of Manhattan.

C. B. J. SNYDER,
Superintendent of School Buildings.
Dated December 24, 1906.
d22,j7

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

DEPARTMENT OF EDUCATION, CORNER OF PARK AVENUE AND FIFTY-NINTH STREET, BOROUGH OF MANHATTAN, CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Superintendent of School Buildings at the above office of the Department of Education until 11 o'clock a. m. on

MONDAY, JANUARY 7, 1907.
Borough of Manhattan.

No. 3. FOR FURNITURE OF NEW PUBLIC SCHOOL 65, ON FORSYTH AND ELDRIDGE STREETS, ABOUT 125 FEET NORTH OF CANAL STREET, BOROUGH OF MANHATTAN.

The time allowed to complete the whole work will be 60 working days, as provided in the contract.

The amount of security required is as follows:

Item 1	$3,000 00
Item 2	1,800 00
Item 3	1,000 00
Item 4	2,000 00
Item 5	9,000 00

A separate proposal must be submitted for each item, and award will be made thereon.

No. 4. FOR GLASS TO BE FURNISHED TO THE VARIOUS SCHOOLS IN THE BOROUGH OF MANHATTAN.

The time allowed to complete the whole work will be 30 working days, as provided in the contract.

The amount of security required is One Thousand Five Hundred Dollars.

Borough of Queens.

No. 5. FOR ALTERATIONS AND REPAIRS TO ELECTRIC BELL SYSTEMS, ALSO ELECTRIC CLOCKS AND THE MAINTENANCE OF SAME OF PUBLIC SCHOOLS 1 TO 9, 11 TO 39, 42 TO 76, 78 TO 87, INCLUSIVE; ALSO BRYANT HIGH AND JAMAICA TRAINING SCHOOLS, IN THE BOROUGH OF QUEENS.

The time allowed to complete the whole work will be 30 working days, as provided in the contract.

The amount of security required is One Thousand Six Hundred Dollars.

Borough of Richmond.

No. 6. FOR INSTALLING ELECTRIC EQUIPMENT IN ADDITION TO AND ALTERATIONS IN PUBLIC SCHOOL 3, ON THE SOUTH SIDE OF CHURCH STREET, EAST OF SHARROTT AVENUE, PLEASANT PLAINS, BOROUGH OF RICHMOND.

The time of completion is 80 working days.

The amount of security required is Two Thousand Dollars.

No. 7. FOR ERECTING FIRE ESCAPES AND MAKING NECESSARY ALTERATIONS AT PUBLIC SCHOOL 12, STEUBEN STREET, CONCORD, AND PUBLIC SCHOOL 14, BROAD STREET, STAPLETON, BOROUGH OF RICHMOND.

The time allowed to complete the whole work on each school will be 45 working days, as provided in the contract.

The amount of security required is as follows:

Public School 12	$1,500 00
Public School 14	200 00

A separate proposal must be submitted for each school, and award will be made thereon.

On Contracts Nos. 4, 5 and 6 the bids will be compared and the contract awarded in a lump sum to the lowest bidder on each contract.

On Contracts Nos. 3 and 7 the bidders must state the price of each or any article or item contained in the specifications or schedules herein contained or hereto annexed, by which the bids will be tested.

Extensions must be made and footed up, as the bids will be read from the total of each item, and award made to the lowest bidder on each item.

Delivery will be required to be made at the time and manner and in such quantities as may be directed.

Blank forms, plans and specifications may be obtained or seen at the office of the Superintendent, at Estimating Room, ninth floor, Hall of the Board of Education, Park avenue and Fifty-ninth street, Borough of Manhattan; also at Branch offices, No. 69 Broadway, Flushing, Borough of Queens, and Borough Hall, New Brighton, Borough of Richmond, for work for their respective boroughs.

C. B. J. SNYDER,
Superintendent of School Buildings.

Dated December 26, 1906.

d22,j7

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

DEPARTMENT OF EDUCATION, SOUTHWEST CORNER OF PARK AVENUE AND FIFTY-NINTH STREET, BOROUGH OF MANHATTAN, CITY OF NEW YORK.

TO BE SOLD AT PUBLIC AUCTION, **MONDAY, DECEMBER 31, 1906** at 11 a. m., at Storehouse, No. 426 East One Hundred and Tenth street,

Borough of Manhattan.

USED AND DISCARDED FURNITURE, BUILDING MATERIALS, ETC.

The following is a list of the articles to be sold:

Assortment of broken desks and chairs.
54 modeling desks.
Gymnasium apparatus, old lumber, etc.
3 book closets.
3 tables and 4 desks.
12 small desks.
13 lockers, 1 closet base and 4 desks.
12 wire screens.
Various parts of filing boxes.
14 crates of sash adjusters.
63 fast top desks.
141 three-seated desks.
9 settees.
8 biology tables.
2 swings.
36 three-seated desks.
4 screens.
106 desks on street.
20 pieces of slate.
64 pedestal chairs and box top desks, 1 water filter, 1 gas range, 17 pieces of pine partition, 1 rolling shutter, 36 glass rolling doors.
16 large rolling doors and sash.

The successful bidder will be required to pay in cash the amount of his purchase at the time and place of sale, in addition to submitting a cash bond in the sum of One Hundred Dollars to guarantee the removal of the articles from the premises within the specified time.

The removal of said articles from the premises must be made within five (5) working days from date of sale.

Should the successful bidder fail to remove the articles within five (5) days the said bidder will be considered as having forfeited ownership of the said articles and the cash deposit and the articles will be removed from the premises by the Board of Education.

The goods can be examined at the above address between the hours of 8 a. m. and 5 p. m. on any week-day before the day of sale.

C. B. J. SNYDER,
Superintendent of School Buildings.

Dated December 19, 1906.

d19,31

CHANGE OF GRADE DAMAGE COMMISSION.

TWENTY-THIRD AND TWENTY-FOURTH WARDS.

PURSUANT TO THE PROVISIONS OF **chapter 537 of the Laws of 1893 and the Acts amendatory thereof and supplemental thereto, notice is hereby given that meetings of the Commissioners appointed under said Acts will be held at the office of the Commission, Room 138, No. 280 Broadway (Stewart Building), Borough of Manhattan, New York City, on Mondays, Wednesdays and Fridays of each week, at 2 o'clock p. m., until further notice.**

Dated New York City, November 20, 1906.

WILLIAM E. STILLINGS,
GEORGE C. NORTON,
OSCAR S. BAILEY,
Commissioners.

LAMONT MCLOUGHLIN,
Clerk.

NORMAL COLLEGE OF THE CITY OF NEW YORK.

EXAMINATIONS FOR POSITIONS ON THE ELIGIBLE LIST FOR TEACHERS IN THE NORMAL COLLEGE OF THE CITY OF NEW YORK.

Department of German—
College Instructor—Salary $2,000, with an annual increase of $100 until a maximum of $2,500 is reached.

Teaching Experience—Three years' class experience in college or high school grades.
Scope—Literature, grammar, translation, composition in German, and German history.
Age Limit—The age limit is 40 years.
Date—December 27 and 28, at 9 a. m., in the library of the college, Park avenue and Sixty-eighth street.

Laboratory and Teaching Assistants—
Chemistry and Physics—College Department.
Physics—High School Department.
Natural Science—College Department.
Natural Science—High School Department.
Candidates must hold an approved college degree.
Date—Wednesday, December 5, 1906, at 9 a. m., in the college library, Park avenue and Sixty-eighth street.

JOSEPH A. GILLET,
Acting President.

n23,d28

BOROUGH OF BROOKLYN.

NOTICE OF PUBLIC SALE BY AUCTION.

ON MONDAY, DECEMBER 31, 1906, AT 11 o'clock a. m., the Commissioner of Public Works will sell at public auction the following:

1 bay horse.
About 100 yards old carpet.
About 30 feet of office railing.
1 lot of old iron, about 200 pounds.
8 old doors.
1 lot old document files, about 200.
4 old tables.
4 old desks.
About 75 old chairs.
About 30 paper files.
2 old flat top desks.
18 wooden drawers.
About 50 feet of wire railing.
1 round iron radiator.
1 wardrobe.
1 flat table.
1 bookcase.
3 wooden cases.
2 roll top desks.
1 large wooden case.
1 filing case.
A quantity of old American flags.

Sale will take place at the office of the Assistant Commissioner of Public Works, Room 15, Municipal Building, Borough of Brooklyn.

Intending bidders may apply for particulars at said office before date of sale.

TERMS OF SALE.

Cash payment in bankable funds at the time and place of sale, and the removal of the horse, desks, table, etc., immediately. If the purchaser or purchasers fails or fail to remove said horse, desks, table, etc., the purcase money and ownership of same will be forfeited.

DURBIN VAN VLECK,
Assistant Commissioner of Public Works,
Borough of Brooklyn.

d26,31

OFFICE OF THE PRESIDENT OF THE BOROUGH OF BROOKLYN, ROOM NO. 15, MUNICIPAL BUILDING, BOROUGH OF BROOKLYN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the President of the Borough of Brooklyn at the above office until 11 o'clock a. m. on

WEDNESDAY, JANUARY 9, 1907.

No. 1. FOR CURBING AND PAVING WITH ASPHALT PAVEMENT ON A CONCRETE FOUNDATION THE ROADWAY OF BATH AVENUE, FROM BAY EIGHTEENTH STREET TO BAY NINETEENTH STREET.

The Engineer's estimate of the quantities is as follows:

438 square yards of asphalt pavement.
61 cubic yards of concrete.
316 linear feet of concrete curb.

Time for the completion of the work and the full performance of the contract is twenty (20) working days.

The amount of security required is Five Hundred Dollars.

No. 2. FOR CURBING, GUTTERING AND LAYING SIDEWALKS ON EIGHTY-FOURTH STREET, FROM FOURTH AVENUE TO SEVENTH AVENUE.

The Engineer's estimate of the quantities is as follows:

1,067 square yards of brick gutters on a concrete foundation.
4,675 linear feet of new curbstone set in concrete.
100 linear feet of old curbstone to be reset.
349 cubic yards of concrete, not to be bid for.
23,350 square feet of cement sidewalk.

Time for the completion of the work and the full performance of the contract is forty (40) working days.

The amount of security required is Four Thousand Dollars.

No. 3. FOR REGULATING, GRADING, CURBING AND LAYING SIDEWALKS ON FORTY-FIRST STREET, FROM THIRTEENTH AVENUE TO NEW UTRECHT AVENUE.

The Engineer's estimate of the quantities is as follows:

4,512 linear feet of new curbstone set in concrete.
70 linear feet of old curbstone to be reset.
720 cubic yards of earth excavation.
760 cubic yards of earth filling, to be furnished.
223 cubic yards of concrete, not to be bid for.
11,650 square feet of cement sidewalk.

Time for the completion of the work and the full performance of the contract is forty (40) working days.

The amount of security required is Two Thousand Five Hundred Dollars.

No. 4. FOR REGULATING AND REPAVING WITH ASPHALT PAVEMENT ON A CONCRETE FOUNDATION THE ROADWAY OF STOCKTON STREET, FROM LEWIS AVENUE TO BROADWAY.

The Engineer's estimate of the quantities is as follows:

1,390 square yards of asphalt pavement.
230 cubic yards of concrete.
680 linear feet of new curbstone.
40 linear feet of old curbstone to be reset.
4 noiseless covers and heads, complete, for sewer manholes.

Time for the completion of the work and the full performance of the contract is twenty (20) working days.

The amount of security required is One Thousand Dollars.

The bidder will state the price of each item or article contained in the specifications or schedules herein contained or hereto annexed, per linear foot, square yard, cubic yard, or other unit of measure, by which the bids will be tested.

The bids will be compared and the contract awarded at a lump or aggregate sum for each contract.

Blank forms and further information may be obtained and the plans and drawings may be seen at the office of the Assistant Commissioner of Public Works, the Borough of Brooklyn, Room No. 15, Municipal Building, Borough of Brooklyn.

BIRD S. COLER,
President.

Dated December 21, 1906.

d24,j9

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

NOTICE OF PUBLIC SALE BY AUCTION.

ON MONDAY, DECEMBER 31, 1906, AT 11 o'clock a. m., the Commissioner of Public Works will sell at public auction the following:

Lot No. 1. Consisting of old furniture.
Lot No. 2. Consisting of one netting banner, ropes, etc.
Lot No. 3. Consisting of 320 yellow pressed bricks.
Lot No. 4. Consisting of nine milk cans.
Lot No. 5. Consisting of one brownstone stepping stone.
Lot No. 6. Bar fixtures, consisting of two pairs of mirrors and one icebox.
Lot No. 7. One painter's scaffold.
Lot No. 8. Miscellaneous; 300 pounds of old iron, more or less, including one large iron vat; five Edison electric light lamps with globes; 250 feet insulated copper wire; three news-stands; one tutti-frutti machine; one real estate sign and one wire and wood sign.

All of the above-mentioned articles may be seen at the Wallabout yard.

The sale will take place at the office of the Assistant Commissioner of Public Works, Room 15, Municipal Building, Borough of Brooklyn.

Intending bidders may apply for particulars at said office before the day of sale.

TERMS OF SALE.

Cash payment in bankable funds at the time and place of sale, and the removal of the furniture, bricks, cans, etc., immediately. If the purchaser or purchasers fails or fail to remove said furniture, bricks, cans, etc., the purchase money and ownership of the same will be forfeited.

DURBIN VAN VLECK,
Assistant Commissioner of Public Works,
Borough of Brooklyn.

d22,28

OFFICE OF THE PRESIDENT OF THE BOROUGH OF BROOKLYN, ROOM 15, MUNICIPAL BUILDING, BOROUGH OF BROOKLYN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the President of the Borough of Brooklyn at the above office until 11 o'clock a. m. on

WEDNESDAY, JANUARY 9, 1907.

FOR FURNISHING ALL LABOR AND MATERIAL REQUIRED FOR THE ERECTION AND COMPLETION OF A COAL VAULT ADJACENT TO THE BOILER ROOM OF THE KINGS COUNTY COURT HOUSE, BOROUGH OF BROOKLYN, THE CITY OF NEW YORK.

The items for which prices will be named are as follows:

1. Price for the work complete.
2. Price per cubic yard for excavation.
3. Price per cubic yard for concrete in place.
4. Price per square yard for asphalt block pavement in place.
5. Price per square foot granolithic sidewalk in place.

Time allowed for completion of work, thirty days.

Amount of security required will be One Thousand Five Hundred Dollars ($1,500).

The bidder will state the price of each item or article contained in the specifications or schedules herein contained or hereto annexed, per cubic foot, square yard, cubic yard or other unit of measure, by which the bids will be tested. The bids will be compared and the contract awarded at a lump or aggregate sum for each contract.

Blank forms and further information may be obtained and the plans and drawings may be seen at the office of the Assistant Commissioner of Public Works of the Borough of Brooklyn, No. 15 Municipal Building, Borough of Brooklyn.

BIRD S. COLER,
President.

Dated December 20, 1906.

d21,j9

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

DEPARTMENT OF STREET CLEANING.

MAIN OFFICE OF THE DEPARTMENT OF STREET CLEANING, ROOM 1421, NOS. 13 TO 21 PARK ROW, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Commissioner of Street Cleaning at the above office until 12 o'clock m., on

THURSDAY, DECEMBER 27, 1906.

Borough of Brooklyn.

CONTRACT FOR FURNISHING AND DELIVERING SEVENTY-FIVE (75) HORSES.

The time for the delivery of the articles, materials and supplies and the performance of the contract is by or before March 1, 1907.

The amount of security required is fifty per cent. (50%) of the amount of the bid or estimate.

The bidder will state the price of each item or article contained in the specifications or schedules herein contained or hereto annexed, per horse, by which the bids will be tested. The extensions must be made and footed up, as the bids will be read from the total and award made to the lowest bidder.

Delivery will be required to be made at the time and in the manner and in such quantities as may be directed.

Blank forms and further information may be obtained at the office of the Department of Street Cleaning, the Borough of Manhattan, Nos. 13 to 21 Park row.

M. CRAVEN,
Commissioner of Street Cleaning.

Dated December 11, 1906.

d12,27

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

DEPARTMENT OF STREET CLEANING, NEW YORK, October 25, 1906.

PUBLIC NOTICE.

PUBLIC NOTICE IS HEREBY GIVEN that written applications for non-competitive examinations for the following positions on the steam dumpers "Cinderella," "Aschenbroedel" and "Cenerentola," in accordance with the rules of the Municipal Civil Service Commission, will be received at the main office of the Department of Street Cleaning, on the fourteenth floor of Nos. 13 to 21 Park row, Room 1416, on Wednesdays of each week at 2 o'clock p. m., beginning

WEDNESDAY, OCTOBER 24, 1906.

3 Masters.
3 Mates.
6 Marine Enginemen.
12 Deckhands.
12 Firemen.

M. CRAVEN,
Commissioner.

027

ASHES, ETC., FOR FILLING IN LANDS.

PERSONS HAVING LANDS OR PLACES in the vicinity of New York Bay to fill in can procure material for that purpose—ashes, street sweepings, etc., collected by the Department of Street Cleaning—free of charge by applying to the Commissioner of Street Cleaning, Nos. 13 to 21 Park row, Borough of Manhattan.

MACDONOUGH CRAVEN,
Commissioner of Street Cleaning.

DEPARTMENT OF FINANCE.

CORPORATION SALE OF BUILDINGS AND APPURTENANCES THERETO ON CITY REAL ESTATE.

AT THE REQUEST OF THE PRESIDENT of the Borough of The Bronx, public notice is hereby given that the Commissioners of the Sinking Fund of The City of New York, by virtue of the powers vested in them by law, will offer for sale at public auction the buildings, parts of buildings, etc., standing within the lines of property owned by The City of New York, acquired for street purposes, in the

Borough of The Bronx.

All the buildings, parts of buildings, etc., situated upon property acquired for the opening of Summit place, from Heath avenue to Boston avenue, in the Twenty-fourth Ward, of the Borough of The Bronx, more particularly described on a map on file in the office of the Collector of City Revenue, Department of Finance, Room 141, No. 280 Broadway, Borough of Manhattan. The sale will take place on

TUESDAY, JANUARY 8, 1907

at 1 p. m., on the premises, and will be sold at the highest marketable price on the following

TERMS AND CONDITIONS.

Cash payment in bankable funds at the time and place of sale, and the entire removal of the buildings, parts of buildings, etc., standing within the lines of said streets, from the streets, by the purchaser or purchasers immediately after the sale. If the purchaser or purchasers fail to effect a removal within thirty days, he or they shall forfeit his or their purchase money and the ownership of the buildings, parts of buildings, etc., and The City of New York will cause the same to be removed without notice to the purchaser.

Purchasers to be liable for any and all damages of any kind whatsoever by reason of the occupation or removal of said buildings, parts of buildings, etc.

The bidder's assent and agreement to the above terms and conditions are understood to be implied by the act of bidding.

By direction of the Comptroller, sales of the above-described property will be made under the supervision of the Collector of City Revenue at the time stated herein.

Full particulars of sale can be obtained at the office of the Collector of City Revenue, Room 141, Stewart Building, No. 280 Broadway, Borough of Manhattan.

H. A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 20, 1906.

d26,j8

NOTICE OF ASSESSMENTS FOR OPENING STREETS AND PARKS.

IN PURSUANCE OF SECTION 1005 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice of the confirmation by the Supreme Court, and the entering in the Bureau for the Collection of Assessments and Arrears of the assessment for OPENING AND ACQUIRING TITLE to the following-named place in the BOROUGH OF THE BRONX:

TWENTY-FOURTH WARD, SECTION 12.

CLINTON PLACE—OPENING AND EXTENDING, from Aqueduct avenue to Jerome avenue. Confirmed March 11, 1903; entered December 24, 1906. Area of assessment includes all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of The Bronx, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at a point formed by the intersection of the northwesterly prolongation of a line parallel to the southwesterly line of Clinton place and distant 100 feet southwesterly therefrom with a line parallel to the northwesterly line of Aqueduct avenue and distant 100 feet northwesterly therefrom; running thence northeasterly along the last-mentioned parallel line to its intersection with the northwesterly prolongation of a line parallel to the northeasterly line of Clinton place and distant 100 feet northeasterly therefrom; thence southeasterly along said prolongation and parallel

line and its prolongation southeasterly to its intersection with a line parallel to the southeasterly line of Jerome avenue and distant 100 feet southeasterly therefrom; thence southwesterly along said parallel line to its intersection with a line parallel to the southwesterly line of Cameron place and distant 100 feet southwesterly therefrom; thence northwesterly along said parallel line to its intersection with the southeasterly line of Jerome avenue; thence northerly in a straight line to the point of intersection of the northwesterly line of Jerome avenue with a line parallel to the southwesterly line of Clinton place and distant 100 feet southwesterly therefrom; thence northwesterly along said parallel line to the point or place of beginning.

The above-entitled assessment was entered on the date hereinbefore given in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents. Unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of said entry of the assessment, interest will be collected thereon, as provided in section 1006 of the Greater New York Charter.

Said section provides that "If any such assessment shall remain unpaid for the period of sixty days after the date of entry thereof in the said Record of Titles of Assessments, it shall be the duty of the officer authorized to collect and receive the amount of such assessment to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculated to the date of payment from the date when such assessment became a lien, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessment is payable to the Collector of Assessments and Arrears at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, corner of One Hundred and Seventy-seventh street and Third avenue, Borough of The Bronx, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. to 12 m., and all payments made thereon on or before February 23, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when above assessment became a lien to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 24, 1906.

d26,j9

CORPORATION SALE OF BUILDINGS AND APPURTENANCES THERETO ON CITY REAL ESTATE.

PUBLIC NOTICE IS HEREBY GIVEN that the Commissioners of the Sinking Fund, by virtue of the powers vested in them by law, will offer for sale at public auction the buildings, parts of buildings, etc., standing upon property owned by The City of New York, acquired for the Department of Parks, said buildings being situated in the Borough of Manhattan and erected upon property described as follows: Being the property situated on Bradhurst avenue, between West One Hundred and Fifty-third and West One Hundred and Fifty-fourth streets, in the Borough of Manhattan, and situated within the area of Colonial Park, and which is more particularly described on a survey on file in the office of the Collector of City Revenue, Department of Finance, Room 141, No. 280 Broadway, Manhattan.

By direction of the Comptroller, the sale of the above described building and appurtenances thereto will be made under the supervision of the Collector of City Revenue, Department of Finance.

The sale will take place on

WEDNESDAY, JANUARY 9, 1907

at 11 a. m., on the premises, on the following

TERMS AND CONDITIONS.

The buildings and appurtenances thereto will be sold to the highest bidder, who must pay immediately cash or a certified check drawn to the order of the Comptroller of The City of New York, and must either give a cash bond or an approved bond of a surety company in the amount of the purchase price as security for the proper performance of the work of removal, which must be completed within thirty working days thereafter.

All the buildings, structures and parts thereof, their fixtures and foundations of every class and description within the described area are to be torn down to a level two feet below the existing curb, and structures which may exist within any of the buildings, such as engine beds, boiler settings, etc., and all stoops and area walls shall be torn down to the same level. All partitions, sheds and fences shall be removed from the premises. All brick laid in mortar, all floor beams, joists, studdings, flooring, ceiling, roofing, boards and woodwork of every description, and all gas, water, steam and soil piping shall be removed from the premises. All combustible matter, such as tar and felt roofing, broken laths and fragments of timber, chips, splinters, etc., which are of no value, shall be gathered together by the contractor and burned or carried away. The purchaser at the sale shall also shut off and cap all water pipes, in compliance with the rules and regulations of the Department of Water Supply, Gas and Electricity.

Failure to remove said buildings and appurtenances, or any portion thereof, within said period, will work forfeiture of ownership of such buildings or appurtenances, or portion as shall then be left standing, and the bidder's assent to the above conditions being understood to be implied by the act of bidding, and the said City of New York will, without notice to the purchaser, cause the same to be removed and the cost and expense thereof charged against the security above mentioned.

The work of removal must be carried on in every respect in a thorough and workmanlike manner, and the successful bidder will provide and furnish all materials of labor and machinery necessary thereto, and will place proper and sufficient guards and fences and warning signs by day and night for the prevention of accidents, and will indemnify and save harmless The City of New York, its officers, agents and servants, and each of them, against any and all suits and actions, claims and demands of every name and description brought against it, them or any of them, and against and from all damages and costs to which it, they or any of them be put by reason of injury to the person or property of another, resulting from negligence or carelessness in the performance of the work or in guarding the same, or from any improper or defective materials or machinery, implements or appliances used in the removal of the said buildings by the said successful bidder.

Party walls and fences when existing against adjacent property not sold shall not be taken down, but all furrings, plaster, chimneys, projecting brick, etc., on the faces of such party walls shall be taken down and removed. The walls shall be made permanently self-supporting without the aid of braces, the beam holes, etc., bricked up, and the wall pointed and made to exclude wind and rain and present a clean exterior. The roofs of the adjacent buildings shall be properly flashed and painted and made water tight where they have been disturbed by the operation of the contractor.

The Comptroller of The City of New York reserves the right on the day of the sale to withdraw from sale any of the buildings or parts of buildings and machinery included in the foregoing parcel.

H. A. METZ,
Comptroller.

City of New York, Department of Finance, Comptroller's Office, December 20, 1906.

d21,j9

CORPORATION SALE OF BUILDINGS AND APPURTENANCES THERETO ON CITY REAL ESTATE.

PUBLIC NOTICE IS HEREBY GIVEN that the Commissioners of the Sinking Fund, by virtue of the powers vested in them by law, will offer for sale at public auction the buildings, parts of buildings, etc., standing upon property owned by The City of New York, acquired for Fire Department purposes, said buildings being situated in the Borough of The Bronx, and erected upon property described as follows: Being the building situated on the easterly side of Longfellow avenue (Lillian place), about 50 feet south of Boston road, in the Borough of The Bronx, and on which there is erected a frame structure formerly occupied by the Volunteer Department of West Farms.

By direction of the Comptroller, the sale of the above-described building and appurtenances thereto will be made under the supervision of the Collector of City Revenue, Department of Finance.

The sale will take place on

TUESDAY, JANUARY 8, 1907

at 11 a. m., on the premises, on the following

TERMS AND CONDITIONS.

The buildings and appurtenances thereto will be sold to the highest bidder, who must pay immediately cash or a certified check drawn to the order of the Comptroller of The City of New York, and must either give a cash bond or an approved bond of a surety company in the amount of the purchase price, as security for the proper performance of the work of removal, which must be completed within thirty working days thereafter.

All the buildings, structures and parts thereof, their fixtures and foundations of every class and description within the described area, are to be torn down to a level two feet below the existing curb, and structures which may exist within any of the buildings, such as engine beds, boiler settings, etc., and all stoops and area walls, shall be torn down to the same level. All partitions, sheds and fences shall be removed from the premises. All brick laid in mortar, all floor beams, joists, studdings, flooring, ceiling, roofing, boards and woodwork, of every description, and all gas, water, steam and soil piping shall be removed from the premises. All combustible matter, such as tar and felt roofing, broken laths and fragments of timber, chips, splinters, etc., which are of no value, shall be gathered together by the contractor and burned or carried away. The purchaser at the sale shall also shut off and cap all water pipes, in compliance with the rules and regulations of the Department of Water Supply, Gas and Electricity.

Failure to remove said buildings and appurtenances, or any portion thereof, within said period, will work forfeiture of ownership of such buildings or appurtenances, or portion as shall then be left standing, and the bidder's assent to the above conditions being understood to be implied by the act of bidding, and the said City of New York will, without notice to the purchaser, cause the same to be removed and the cost and expense charged against the security above mentioned.

The work of removal must be carried on in every respect in a thorough and workmanlike manner, and the successful bidder will provide and furnish all materials of labor and machinery necessary thereto, and will place proper and sufficient guards and fences and warning signs by day and night for the prevention of accidents, and will indemnify and save harmless The City of New York, its officers, agents and servants, and each of them, against any and all suits and actions, claims and demands of every name and description brought against it, them or any of them, and against and from all damages and costs to which it, they or any of them be put by reason of injury to the person or property of another, resulting from negligence or carelessness in the performance of the work or in guarding the same, or from any improper or defective materials or machinery, implements or appliances used in the removal of the said buildings by the said successful bidder.

Party walls and fences when existing against adjacent property not sold, shall not be taken down, but all furrings, plaster, chimneys, projecting brick, etc., on the faces of such party walls shall be taken down and removed. The walls shall be made permanently self-supporting without the aid of braces, the beam-holes, etc., bricked up and the wall pointed and made to exclude wind and rain and present a clean exterior. The roofs of the adjacent buildings shall be properly flashed and painted and made water-tight where they have been disturbed by the operation of the contractor.

The Comptroller of The City of New York reserves the right on the day of the sale to withdraw from sale any of the buildings or parts of buildings and machinery included in the foregoing parcel.

H. A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 20, 1906.

d21,j8

NOTICE OF ASSESSMENTS FOR OPENING STREETS AND PARKS.

IN PURSUANCE OF SECTION 1005 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice of the confirmation by the Supreme Court, and the entering in the Bureau for the Collection of Assessments and Arrears of the assessments for OPENING AND ACQUIRING TITLE to the following-named street and road in the BOROUGH OF THE BRONX:

TWENTY-FOURTH WARD, SECTION 11.

DRAINAGE STREET—OPENING AND EXTENDING, twenty feet in width, from Boone street to Longfellow street. Confirmed June 21, 1906; entered December 20, 1906. Area of assessment includes all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of The Bronx, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at a point formed by the intersection of the northeasterly line of Jennings street and a line parallel to and distant one hundred (100) feet southeasterly of the southeasterly line of Boone street; running thence northeasterly along said parallel line to its intersection with a line parallel to and distant one hundred (100) feet northeasterly of the northeasterly line of East One Hundred and Seventy-second street; thence northwesterly along said last-mentioned parallel line to its intersection with the middle line of the block between Longfellow street and Boone street; thence northeasterly along said middle line of the block to its intersection with the southwesterly line of East One Hundred and Seventy-third street; thence northwesterly along said line to its intersection with the middle line of the block between Longfellow street and Bryant street; thence southwesterly along said middle line of the block to its intersection with a line parallel to and distant one hundred (100) feet northeasterly of the northeasterly line of East One Hundred and Seventy-second street; thence northwesterly along said parallel line to its intersection with the southeasterly line of Bryant street; thence southwesterly along said line to its intersection with a line parallel to and distant one hundred (100) feet southwesterly of the southwesterly line of East One Hundred and Seventy-second street; thence southeasterly along said parallel line to its intersection with the middle line of the block between Longfellow street and Bryant street; thence southwesterly along said middle line of the block to its intersection with the northeasterly line of Jennings street; thence southeasterly along said line to the point or place of beginning.

TWENTY-FOURTH WARD, SECTION 12.

ALBANY ROAD—OPENING, from Bailey avenue to Van Cortlandt Park. Confirmed October 27, 1903, February 10, 1904, November 16, 1904, and November 23, 1905; entered December 20, 1906. Area of assessment includes all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of The Bronx, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at the point formed by the intersection of the northeasterly line of Riverdale avenue with the southwesterly line of Broadway; running thence northeasterly along said line of Broadway to its intersection with the southwestly line of East Two Hundred and Thirty-third street; thence southeasterly along said southwesterly line to its intersection with the southeasterly line of the New York and Putnam Railway; thence northeasterly along said line of railway to its intersection with a line parallel to the northerly line of Van Cortlandt Park South and distant 200 feet northerly therefrom; thence easterly along said parallel line to a point due north of the intersection of the centre lines of Van Cortlandt avenue and Bailey avenue; thence due south to the southerly line of Bailey avenue; thence easterly and southeasterly along said line of Bailey avenue to its intersection with the southwesterly line of East Two Hundred and Thirty-eighth street; thence southeasterly along said line of East Two Hundred and Thirty-eighth street to its intersection with the northwesterly line of Cannon place; thence southwesterly and southerly along said line of Cannon place and its southerly prolongation to its intersection with the northerly line of Heath avenue; thence westerly and southwesterly along the northerly and northwesterly line of Heath avenue to its intersection with the northeasterly line of Riverdale avenue; thence northwesterly along the northeasterly line of Riverdale avenue to the point or place of beginning.

The above entitled assessments were entered on the date hereinbefore given in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents. Unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of said entry of the assessment interest will be collected thereon, as provided in section 1006 of the Greater New York Charter.

Said section provides that "If any such assessment shall remain unpaid for the period of sixty days after the date of entry thereof in the said Record of Titles of Assessments, it shall be the duty of the officer authorized to collect and receive the amount of such assessment to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculated to the date of payment from the date when such assessment became a lien, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessments are payable to the Collector of Assessments and Arrears at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, corner of One Hundred and Seventy-seventh street and Third avenue, Borough of The Bronx, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. to 12 m., and all payments made thereon on or before February 18, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when above assessments became liens to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 20, 1906.

d21,j5

CORPORATION SALE OF REAL ESTATE.

PUBLIC NOTICE IS HEREBY GIVEN that the Commissioners of the Sinking Fund of The City of New York, by virtue of the powers vested in them by law, will offer for sale at public auction, on

THURSDAY, JANUARY 10, 1907

at 12 o'clock m., at the Comptroller's Office, No. 280 Broadway, Borough of Manhattan, City of New York, all the right, title and interest of The City of New York in and to the following described property, which it has by virtue of a lease from William V. B. Bennett, Supervisor of the Town of Gravesend, to the City of Brooklyn, which lease is dated December 28, 1895, recorded in the Kings County Register's Office in Liber 1 of Conveyances, page 25: Premises situated and located in the Borough of Brooklyn, and known as and by the number 30 upon the assessment roll for the opening of Sea Breeze avenue, from West Fifth street to East Fifth street, in the former Town of Gravesend, which was sold to the Town of Gravesend at a sale for unpaid assessments, held January 11, 1893, for the sum of $88.91, and which said property was leased to the City of Brooklyn for a term of one hundred years.

The minimum or upset price at which the interest of the City in and to the premises to be sold is appraised and fixed by the Commissioners of the Sinking Fund at one hundred and sixty dollars and forty cents ($160.40). The purchaser, in addition thereto, to pay the auctioneer's fee on such sale and also to pay the further sum of one hundred dollars ($100) for the expense of examination, advertising, etc. The sale of the said premises is to be made on the following

TERMS AND CONDITIONS.

The highest bidder will be required to pay the full amount of his bid or purchase money, and the $100 on such parcel, together with the auctioneer's fee, as above provided for. The quitclaim deed for the above described premises to be delivered within thirty days from the date of sale.

The Comptroller may, at his option, resell the property if the successful bidder shall fail to comply with the terms of sale, and the person failing to comply therewith will be held liable for any deficiency which may result from any such resale.

The right to reject any bid is reserved.

By order of the Commissioners of the Sinking Fund, under resolution adopted at a meeting of the Board, held November 28, 1906.

H. A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 20, 1906.

d21,j10

NOTICE TO PROPERTY OWNERS.

IN PURSUANCE OF SECTION 1018 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice to all persons, owners of property, affected by the following assessments for LOCAL IMPROVEMENTS in the BOROUGH OF MANHATTAN:

NINTH WARD, SECTION 2.

MACDOUGAL STREET AND MINETTA LANE—REPAIRING SIDEWALKS, on the northwest corner. Area of assessment: Northwest corner of Macdougal street and Minetta lane, Block 543, Lot No. 23.

TWELFTH WARD, SECTION 7.

LENOX AVENUE — REPAIRING SIDEWALKS, west side, between One Hundred and Thirty-ninth and One Hundred and Fortieth streets. Area of assessment: West side of Lenox avenue, from One Hundred and Thirty-ninth street to One Hundred and Fortieth street.

LENOX AVENUE — REPAIRING SIDEWALKS, west side, between One Hundred and Forty-first and One Hundred and Forty-second streets. Area of assessment: West side of Lenox avenue, from One Hundred and Forty-first street to One Hundred and Forty-second street.

WEST ONE HUNDRED AND FORTY-FOURTH STREET—PAVING, CURBING AND RESETTING CURB, between Lenox and Seventh avenues. Area of assessment: Both sides of West One Hundred and Forty-fourth street, from Lenox to Seventh avenue, and to the extent of half the block at the intersecting avenues.

TWELFTH WARD, SECTION 6.

ONE HUNDRED AND THIRTY-FOURTH STREET—REPAIRING SIDEWALKS, north side, beginning 335 feet west of Fifth avenue. Area of assessment: North side of One Hundred and Thirty-fourth street, beginning at a point 335 feet west of Fifth avenue and extending 50 feet westerly, Block 1732, Lots Nos. 22 and 23.

ONE HUNDRED AND THIRTY-FOURTH STREET—REPAIRING SIDEWALKS, south side, beginning 110 feet east of Madison avenue. Area of assessment: South side of One Hundred and Thirty-fourth street, beginning at a point distant about 110 feet east of Madison avenue, extending 75 feet easterly, Block 1758, Lots Nos. 46, 47 and 48.

ONE HUNDRED AND THIRTY-FOURTH STREET—REPAIRING SIDEWALKS, north side, beginning 10 feet west of Madison avenue. Area of assessment: North side of One Hundred and Thirty-fourth street, beginning at a point 10 feet westerly of Madison avenue and extending 60 feet westerly, Block 1759, Lots Nos. 15, 16 and 16½.

TWELFTH WARD, SECTION 8.

WEST ONE HUNDRED AND SEVENTIETH STREET—SEWER, between Fort Washington avenue and Broadway. Area of assessment: Both sides of One Hundred and Seventieth street, from Fort Washington avenue to Broadway.

WEST ONE HUNDRED AND SEVENTY-SECOND STREET—REGULATING, GRADING, CURBING AND FLAGGING, between Broadway and St. Nicholas avenue. Area of assessment: Both sides of West One Hundred and Seventy-second street, from Broadway to St. Nicholas avenue, and to the extent of half the block at the intersecting and terminating streets and avenues.

TWENTIETH WARD, SECTION 3.

THIRTY-THIRD STREET AND ELEVENTH AVENUE—RECEIVING BASIN, on the northwest corner. Area of assessment: North side of Thirty-third street, from Eleventh to Twelfth avenue, and west side of Eleventh avenue, from Thirty-third street to Thirty-fourth street.

TWENTY-SECOND WARD, SECTION 4.

WEST SEVENTY-NINTH STREET — REPAIRING SIDEWALKS, south side, beginning 170 feet west of West End avenue, running to Riverside drive, and including 92 feet on Riverside drive. Area of assessment: South side of Seventy-ninth street, beginning at a point 170 feet west of West End avenue, and extending 130 feet westerly, Block 1186, Lots Nos. 87, 88, 89, 90 and 91.

WEST SIXTIETH STREET—REPAIRING SIDEWALKS, opposite No. 243. Area of assessmen: North side of West Sixtieth street, beginning at a point distant 200 feet east of Eleventh avenue, Block 1152, Lot No. 9.

WEST SIXTY-THIRD STREET—REPAIRING SIDEWALKS, in front of Nos. 140 to 152. Area of assessment: South side of West Sixty-third street, known as Block 1134, Lots Nos. 56, 58, 59 and 60.

—that the same was confirmed by the Board of Assessors on December 18, 1906, and entered on December 18, 1906, in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, and unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of said entry of the assessment, interest will be collected thereon, as provided in section 1019 of said Greater New York Charter.

Said section provides in part that "If any such assessment shall remain unpaid for the period of sixty days after the date of entry thereof in the said Record of Titles of Assessments, it shall be the duty of the officer authorized to collect and receive the amount of such assessment, to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculated to the date of payment from the date when such assessment became a lien, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessments are payable to the Collector of Assessments and Arrears at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, Room 85, No. 280 Broadway, Borough of Manhattan, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. to 12 m., and

all payments made thereon on or before February 16, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when above assessments became liens to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 18, 1906.

d19,j3

NOTICE OF ASSESSMENTS FOR OPENING STREETS AND PARKS.

IN PURSUANCE OF SECTION 1005 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice of the confirmation by the Supreme Court, and the entering in the Bureau for the Collection of Assessments and Arrears of the assessment for OPENING AND ACQUIRING TITLE to the following-named avenue in the BOROUGH OF THE BRONX:

TWENTY-THIRD WARD, SECTION 10.

TRINITY AVENUE—OPENING, from Westchester avenue to East One Hundred and Sixty-sixth street. Confirmed March 21, 1906, and June 6, 1906; entered December 17, 1906. Area of assessment includes all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of The Bronx, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at the intersection of the southerly line of East One Hundred and Sixty-ninth street with the easterly line of Third avenue; running thence easterly along the said line of East One Hundred and Sixty-ninth street to its intersection with the westerly line of Union avenue; thence southerly along the westerly line of Union avenue to its intersection with the northerly line of East One Hundred and Forty-ninth street; thence westerly along the said line of East One Hundred and Forty-ninth street to its intersection with the easterly line of St. Ann's avenue; thence northerly along said line of St. Ann's avenue and along the easterly line of Third avenue to the point or place of beginning.

The above entitled assessment was entered on the date hereinbefore given in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents. Unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of said entry of the assessment, interest will be collected thereon, as provided in section 1006 of the Greater New York Charter.

Said section provides that "If any such assessment shall remain unpaid for the priod of sixty days after the date of entry thereof in the said Record of Titles of Assessments, it shall be the duty of the officer authorized to collect and receive the amount of such assessment to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculaed to the date of payment from the date when such assessment became a lien, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessment is payable to the Collector of Assessments and Arrears at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, corner of One Hundred and Seventy-seventh street and Third avenue, Borough of The Bronx, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. to 12 m., and all payments made thereon on or before February 15, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when above assessment became a lien to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 17, 1906.

d18,j2

NOTICE OF ASSESSMENTS FOR OPENING STREETS AND PARKS.

IN PURSUANCE OF SECTION 1005 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice of the confirmation by the Supreme Court, and the entering in the Bureau for the Collection of Assessments and Arrears, of the assessment for OPENING AND ACQUIRING TITLE to the following-named street in the BOROUGH OF MANHATTAN:

TWELFTH WARD, SECTION 8.

WEST ONE HUNDRED AND FIFTY-EIGHTH STREET—Opening, from St. Nicholas avenue to Edgecombe road. Confirmed June 22, 1904, and December 10, 1906; entered December 14, 1906. Area of assessment includes all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of Manhattan, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at the point of intersection of a line parallel to and 100 feet southeasterly from the southeasterly line of Edgecombe road with the southeasterly prolongation of the middle line of the blocks between West One Hundred and Fifty-sixth street and West One Hundred and Fifty-seventh street; running thence northwesterly along said prolongation and middle line and its northwesterly prolongation to its intersection with the bulkhead line of the Hudson river; thence northerly along the said bulkhead line to its intersection with the northwesterly prolongation of the middle line of the blocks between West One Hundred and Fifty-ninth street and West One Hundred and Sixtieth street; thence southeasterly along said prolongation and middle line and its southeasterly prolongation to its intersection with a line parallel to and 100 feet southeasterly from the southeasterly line of Edgecombe road; thence southwesterly along said parallel line to its intersection with the southeasterly prolongation of the middle line of the blocks between West One Hundred and Fifty-eighth street and West One Hundred and Fifty-ninth street; thence southeasterly along said prolongation to its intersection with the northwesterly line of Harlem River driveway; thence southwesterly along said northwesterly line of Harlem River driveway to its intersection with the southeasterly prolongation of the middle line of the blocks between West One Hundred and Fifty-seventh street and West One Hundred and Fifty-eighth street; thence northwesterly along said prolongation to its intersection with a line parallel to and 100 feet southeasterly from the southeasterly line of Edgecombe road; thence southwesterly along said parallel line to the point or place of beginning.

The above-entitled assessment was entered on the date hereinbefore given in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents. Unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of said entry of the assessments interest will be collected thereon, as provided in section 1006 of the Greater New York Charter.

Said section provides that "If any such assessment shall remain unpaid for the period of sixty days after the date of entry thereof in the said Record of Titles of Assessments it shall be the duty of the officer authorized to collect and receive the amount of such assessment to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculaed to the date of payment from the date when such assessment became a lien, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessment is payable to the Collector of Assessments and Arrears at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, corner of One Hundred and Seventy-seventh street and Third avenue, Borough of The Bronx, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. to 12 m., and all payments made thereon on or before February 15, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when above assessment became a lien to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 17, 1906.

d18,j2

NOTICE OF ASSESSMENTS FOR LOCAL IMPROVEMENTS IN THE BOROUGH OF BROOKLYN, CITY OF NEW YORK.

NOTICE IS HEREBY GIVEN THAT THE assessment roll in the following-entitled matter has been completed and will be due and payable on the 15th inst., and that the authority for the collection of the same has been delivered to the Collector of Assessments and Arrears, and all persons liable to pay such assessment are required to pay the same without delay at his office, Rooms 1 and 3, Municipal Building, in the Borough of Brooklyn.

Assessment for benefit from Prospect Park (for lands taken) under chapter 244, Laws of 1878, twenty-ninth installment.

Extracts from the Law.

Chapter 583, Laws of 1888, title 7, section 10, as amended by chapter 888, Laws of 1895; chapter 775, Laws of 1896, and section 937, chapter 378, Laws of 1897, and chapter 466 of the Laws of 1901 amendatory thereof.

On all * * * assessments which shall be paid to the Collector of Assessments and Arrears, before the expiration of thirty days from the time the same shall become due and payable, an allowance shall be made to the person or persons making such payments at the rate of seven and three-tenths per centum per annum for the unexpired portion thereof. On all * * * assessments * * * paid after the expiration of thirty days from the time the same shall have become due and payable there shall be added to and collected as part of every such assessment * * * interest at the rate of nine per cent. per annum, to be computed from the time the same became due and payable to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 15, 1906.

d17,31

NOTICE OF ASSESSMENTS FOR OPENING STREETS AND PARKS.

IN PURSUANCE OF SECTION 1005 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice of the confirmation by the Supreme Court, and the entering in the Bureau for the Collection of Assessments and Arrears of the assessment for OPENING AND ACQUIRING TITLE to the following-named avenue in the BOROUGH OF THE BRONX:

TWENTY-THIRD WARD, SECTION 9.

ANDERSON AVENUE—OPENING, from Jerome avenue to East One Hundred and Sixty-fourth street. Confirmed February 24, 1906, and December 10, 1906; entered December 14, 1906. Area of assessment includes all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of The Bronx, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at the point of intersection of the northerly line of Jerome avenue with a line drawn parallel to and distant 100 feet northwesterly from the northwesterly line of Woodycrest avenue; running thence northeasterly along said parallel line to its intersection with a line drawn parallel to and distant 100 feet northeasterly from the northeasterly line of East One Hundred and Sixty-fifth street; thence southeasterly along said last-mentioned parallel line to its intersection with a line drawn parallel to and distant 100 feet northwesterly from the northwesterly line of Anderson avenue; thence northeasterly along said last-mentioned parallel line to the westerly line of Shakespeare avenue; thence southerly along the westerly line of Shakespeare avenue to its intersection with a line drawn parallel to and distant 100 feet southeasterly from the southeasterly line of Anderson avenue; thence southwesterly along said parallel line to its intersection with a line drawn parallel to and distant 100 feet northeasterly from the northeasterly line of East One Hundred and Sixty-fifth street; thence southeasterly along said last-mentioned parallel line to the northwesterly line of Jerome avenue; thence southwesterly along said northwesterly line of Jerome avenue and the northwesterly line of the elevated approach to the bridge to its intersection with a line drawn parallel to and distant 100 feet southerly from the southerly line of that portion of Jerome avenue lying southwesterly of East One Hundred and Sixty-second street; thence westerly along said parallel line to its intersection with a line drawn at a right angle to the northerly line of Jerome avenue from the point of intersection of the said northerly line of Jerome avenue with a line drawn parallel to and distant 100 feet northwesterly from the northwesterly line of Woodycrest avenue; thence northwesterly along said line drawn at a right angle to Jerome avenue to the point or place of beginning.

TWENTY-THIRD WARD, SECTIONS 9, 10 AND 11.

EAST ONE HUNDRED AND FORTY-NINTH STREET—OPENING, from the Southern Boulevard to the easterly bulkhead line of the Harlem river. Confirmed November 20, 1906; entered December 14, 1906. Area of assessment includes each and every parcel of land in the Twenty-third Ward, Borough of The Bronx, in The City of New York, to an amount, which each parcel was deemed to have been benefited by said widening and improvement under chapter 613 of the Laws of 1896.

The above-entitled assessments were entered on the date hereinbefore given in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents. Unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of said entry of the assessment interest will be collected thereon, as provided in section 1006 of the Greater New York Charter.

Said section provides that "If any such assessment shall remain unpaid for the period of sixty days after the date of entry thereof in the said Record of Titles of Assessments, it shall be the duty of the officer authorized to collect and receive the amount of such assessment to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculated to the date of payment from the date when such assessment became a lien, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessments are payable to the Collector of Assessments and Arrears at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, corner of One Hundred and Seventy-seventh street and Third avenue, Borough of The Bronx, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. to 12 m., and all payments made thereon on or before February 13, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when above assessments became liens to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 14, 1906.

d17,31

NOTICE TO PROPERTY OWNERS.

NOTICE OF ASSESSMENTS FOR OPENING STREETS AND PARKS.

IN PURSUANCE OF SECTION 1005 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice of the confirmation by the Supreme Court and the entering in the Bureau for the Collection of Assessments and Arrears of Assessments for OPENING AND ACQUIRING TITLE to the following-named avenue in the BOROUGH OF BROOKLYN:

THIRTIETH WARD, SECTIONS 17 AND 19.

SEVENTEENTH AVENUE — OPENING, from Flatbush line to Bath avenue. Confirmed December 29, 1905, and October 16, 1906; entered December 13, 1906. Area of assessment includes all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of Brooklyn, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at a point on the southerly side of Forty-fourth street and distant 350 feet westerly of the westerly side of Seventeenth avenue; running thence southwesterly and parallel with Seventeenth avenue to the northerly side of Bath avenue; running thence easterly and along the northerly side of Bath avenue to the westerly side of Bay Seventeenth street; running thence northerly and parallel with Seventeenth avenue to the southerly side of Forty-fifth street; running thence westerly along the southerly side of Forty-fifth street to the centre line of Seventeenth avenue; running thence northerly along the centre line of Seventeenth avenue to the southerly side of Forty-fourth street; running thence westerly along the southerly side of Forty-fourth street to the point or place of beginning.

The above-entitled assessment was entered on the day hereinbefore given in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, and unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of entry of the assessments, interest will be collected thereon, as provided in section 1006 of the Greater New York Charter.

Said section provides that "If any assessment shall remain unpaid for a period of sixty days after the date of entry thereof in the said Record of Titles of Assessments, it shall be the duty of the officer authorized to collect and receive the amouut of such assessment, to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculated to the date of payment from the date when such assessments became liens, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessment is payable to the Collector of Assessments and Arrears at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, Borough of Brooklyn, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. until 12 m., and all payments made thereon on or before February 11, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when such assessments became liens, as provided by section 159 of this act.

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessment is payable to the Collector of Assessments and Arrears at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, Borough of Brooklyn, between the hours of 9 a. m. and 2 p. m., and on Saturdays until 12 m., and all payments made thereon on or before February 11, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when such assessment became a lien to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 13, 1906.

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DEPARTMENT OF FINANCE, CITY OF NEW YORK, December 14, 1906.

UNTIL FURTHER NOTICE AND UNLESS otherwise directed in any special case surety companies will be accepted as sufficient upon the following contracts to the amounts named:

Supplies of Any Description, including Gas and Electricity—
One company on a bond up to $50,000.
Two companies on a bond up to $125,000.
Three companies on a bond up to $200,000.

Asphalt, Asphalt Block and Wood Block Pavements—
Two companies on a bond up to $50,000.
Three companies on a bond up to $125,000.

Regulating, Grading, Paving, Sewers, Water Mains, Dredging, Construction of Parks, Parksways, Etc.—
One company on a bond up to $25,000.
Two companies on a bond up to $75,000.
Three companies on a bond up to $150,000.
Four companies on a bond up to $250,000.

New Docks, Buildings, Bridges, Aqueducts, Tunnels, Etc.—
One company on a bond up to $25,000.
Two companies on a bond up to $75,000.
Three companies on a bond up to $150,000.
Four companies on a bond up to $250,000.

Repairs, Ventilating, Heating, Plumbing, Etc—
One company on a bond up to $25,000.
Two companies on a bond up to $75,000.
Three companies on a bond up to $150,000.
Four companies on a bond up to $250,000.

On bonds regarded as hazardous risks additional surety will be required as the Comptroller sees fit in each instance.

All bonds exceeding $250,000 will by that fact alone be considered hazardous risks, no matter what the nature of the work.

H. A. METZ,
Comptroller.

NOTICE TO PROPERTY OWNERS.

IN PURSUANCE OF SECTION 1018 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice to all persons, owners of property, affected by the following assessment for LOCAL IMPROVEMENTS in the BOROUGH OF THE BRONX:

TWENTY-THIRD AND TWENTY-FOURTH WARDS, SECTIONS 10 AND 11.

VYSE AVENUE — REGULATING, GRADING, CURBING, FLAGGING, LAYING CROSSWALKS, BUILDING APPROACHES AND PLACING FENCES, from West Farms road to East One Hundred and Seventy-second street. Area of assessment: Both sides of Vyse avenue, from West Farms road to East One Hundred and Seventy-second street, and to the extent of half the block at the intersecting and terminating streets and avenues.

—that the same was confirmed by the Board of Revision of Assessments December 13, 1906, and entered on December 13, 1906, in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, and unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of said entry of the assessments interest will be collected thereon, as provided in section 1019 of said Greater New York Charter.

Said section provides, in part, that "If any such assessment shall remain unpaid for the period of sixty days after the date of entry thereof in the said Record of Titles of Assessments, it shall be the duty of the officer authorized to collect and receive the amount of such assessment to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculated to the date of payment from the date when such assessment became a lien, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessment is payable to the Collector of Assessments and Arrears, at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, corner of One Hundred and Seventy-seventh street and Third avenue, Borough of The Bronx, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. to 12 m., and all payments made thereon on or before February 11, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when the above assessment became a lien to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 13, 1906.

d14,28

NOTICE TO PROPERTY OWNERS.

IN PURSUANCE OF SECTION 1018 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice to all persons, owners of property, affected by the following assessment for LOCAL IMPROVEMENTS in the BOROUGH OF BROOKLYN:

THIRTIETH WARD, SECTION 18.

NARROWS AVENUE — REGULATING, GRADING, CURBING AND LAYING CROSSWALKS from Seventy-first street to Seventy-ninth street. Area of assessment: Both sides of Narrows avenue, from Seventy-first street to Seventy-ninth street, and to the extent of half the block at the intersecting streets,

—that the same was confirmed by the Board of Revision of Assessments on December 13, 1906, and entered December 13, 1906, in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, and unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of entry of the assessments, interest will be collected thereon, as provided in section 1019 of the Greater New York Charter.

Said section provides, in part, that "If any such assessment shall remain unpaid for the period of sixty days after the date of entry thereof in the said Record of Titles of Assessments, it shall be the duty of the officer authorized to collect and receive the amount of such assessments, to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculated to the date of payment from the date when such assessments became liens, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessment is payable to the Collector of Assessments and Arrears, at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, Borough of Brooklyn, between the hours of 9 a. m. and 2 p. m., and on Saturdays until 12 m., and all payments made thereon on or before February 11, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when such assessment became a lien to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 13, 1906.

d14,28

NOTICE OF ASSESSMENTS FOR OPENING STREETS AND PARKS.

IN PURSUANCE OF SECTION 1005 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice of the confirmation by the Supreme Court and the entering in the Bureau for the

Collection of Assessments and Arrears of Assessments for OPENING AND ACQUIRING TITLE to the following-named avenue in the BOROUGH OF QUEENS:

FIRST WARD.

HOYT AVENUE—OPENING, from Flushing avenue to the East river. Confirmed September 20, 1905; entered December 12, 1906. Area of assessment includes all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of Queens, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at a point formed by the intersection of the middle line of the block between Briell street and Bartow street with a line parallel to and 100 feet southwesterly from the southwesterly line of Flushing avenue; running thence northwesterly along said parallel line to its intersection with the southwesterly prolongation of a line parallel to and 100 feet northwesterly from the northwesterly line of that part of Debevoise avenue lying northeasterly from Flushing avenue; thence northeasterly along said prolongation and parallel line to its intersection with a line parallel to and 100 feet southwesterly from the southwesterly line of Hoyt avenue; thence northwesterly along said last-mentioned parallel line to its intersection with the bulkhead line of the East river; thence northeasterly along said bulkhead line to its intersection with a line parallel to and 100 feet northeasterly from the northeasterly line of Hoyt avenue; thence southeasterly along said parallel line to its intersection with the northwesterly line of Rapelje avenue; thence easterly to a point formed by the intersection of the southeasterly line of Rapelje avenue with a line parallel to and 100 feet northeasterly from the northeasterly line of Flushing avenue; thence southeasterly along said parallel line to its intersection with a line parallel to and 100 feet southeasterly from the southeasterly line of Rapelje avenue; thence southwesterly along said last-mentioned parallel line to its intersection with the northeasterly line of Flushing avenue; thence southeasterly to a point formed by the intersection of the southwesterly line of Flushing avenue with the middle line of the block between Briell street and Bartow street; thence southwesterly along said middle line to the point or place of beginning.

The above-entitled assessment was entered on the date hereinbefore given in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents. Unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of said entry of the assessments, interest will be collected thereon, as provided in section 1016 of the Greater New York Charter.

Said section provides that "If any such assessment shall remain unpaid for the period of sixty days after the date of entry thereof in the said Record of Titles of Assessments, it shall be the duty of the officer authorized to collect and receive the amount of such assessments to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculated to the date of payment from the date when such assessment became a lien, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessment is payable to the Collector of Assessments and Arrears, at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, Room 85, No. 280 Broadway, Borough of Manhattan, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. until 12 m., and all payments made thereon on or before February 11, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when above assessment became a lien to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 12, 1906.

d14,28

NOTICE OF ASSESSMENTS FOR OPENING STREETS AND PARKS.

IN PURSUANCE OF SECTION 1005 OF THE Greater New York Charter, the Comptroller of The City of New York hereby gives public notice of the confirmation by the Supreme Court, and the entering in the Bureau for the Collection of Assessments and Arrears of the assessment for OPENING AND ACQUIRING TITLE to the following-named avenue in the BOROUGH OF THE BRONX:

TWENTY-THIRD AND TWENTY-FOURTH WARDS, SECTIONS 9 AND 11.

TELLER AVENUE—OPENING, from East One Hundred and Sixty-fourth street to East One Hundred and Seventieth street. Confirmed July 18, 1906; entered December 12, 1906. Area of assessment includes all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of The Bronx, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at a point formed by the intersection of a line parallel to and distant one hundred (100) feet southerly from the southerly line of East One Hundred and Sixty-third street and a line parallel to and distant one hundred (100) feet westerly from the westerly line of Morris avenue; running thence northerly along said line parallel to Morris avenue to its intersection with a line parallel to and distant one hundred (100) feet northerly from the northerly line of East One Hundred and Seventy-second street; thence easterly along said parallel line to its intersection with the westerly line of Claremont Park; thence easterly to the point of intersection of the easterly line of Claremont Park and the westerly prolongation of a line parallel to and distant one hundred (100) feet northerly from the northerly line of East One Hundred and Seventy-first street; thence again easterly along said parallel line to East One Hundred and Seventy-first street to its intersection with a line parallel to and distant one hundred (100) feet easterly from the easterly line of Webster avenue; thence southerly along said last-mentioned parallel line and a line parallel to and distant one hundred (100) feet easterly from the easterly line of Melrose avenue to its intersection with the easterly prolongation of a line parallel to and distant one hundred (100) feet southerly from the southerly line of East One Hundred and Sixty-third street; thence westerly along the said last-mentioned prolongation and parallel line to the point or place of beginning.

The above-entitled assessment was entered on the date hereinbefore given in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents. Unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of said entry of the assessment interest will be collected thereon, as provided in section 1006 of the Greater New York Charter.

Said section provides that "If any such assessment shall remain unpaid for the period of sixty days after the date of entry thereof in the said Record of Titles of Assessments, it shall be the duty of the officer authorized to collect and receive the amount of such assessment to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculated to the date of payment from the date when such assessment became a lien, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessment is payable to the Collector of Assessments and Arrears at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, corner of One Hundred and Seventy-seventh street and Third avenue, Borough of The Bronx, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. to 12 m., and all payments made thereon on or before February 11, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when above assessment became a lien to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 12, 1906.

d14,28

NOTICE TO PROPERTY OWNERS.

IN PURSUANCE OF SECTION 1018 OF the Greater New York Charter, the Comptroller of The City of New York hereby gives public notice to all persons, owners of property, affected by the following assessment for LOCAL IMPROVEMENTS in the BOROUGH OF THE BRONX:

TWENTY-THIRD WARD, SECTION 10.

AVENUE ST. JOHN—SEWER AND APPURTENANCES, between Dawson street and the Southern Boulevard. Area of assessment: Both sides of Avenue St. John, from Dawson street to the Southern Boulevard,

—that the same was confirmed by the Board of Assessors December 11, 1906, and entered on December 11, 1906, in the Record of Titles of Assessments, kept in the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, and unless the amount assessed for benefit on any person or property shall be paid within sixty days after the date of said entry of the assessments interest will be collected thereon, as provided in section 1019 of said Greater New York Charter.

Said section provides, in part, that "If any such assessment shall remain unpaid for the period of sixty days after the date of entry thereof in the said Record of Titles of Assessments it shall be the duty of the officer authorized to collect and receive the amount of such assessment to charge, collect and receive interest thereon at the rate of seven per centum per annum, to be calculated to the date of payment from the date when such assessment became a lien, as provided by section 159 of this act."

Section 159 of this act provides * * * "An assessment shall become a lien upon the real estate affected thereby ten days after its entry in the said record." * * *

The above assessment is payable to the Collector of Assessments and Arrears, at the Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents, in the Municipal Building, corner of One Hundred and Seventy-seventh street and Third avenue, Borough of The Bronx, between the hours of 9 a. m. and 2 p. m., and on Saturdays from 9 a. m. to 12 m., and all payments made thereon on or before February 9, 1907, will be exempt from interest, as above provided, and after that date will be subject to a charge of interest at the rate of seven per centum per annum from the date when the above assessment became a lien to the date of payment.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, December 11, 1906.

d12,26

DEPARTMENT OF FINANCE, BUREAU FOR THE COLLECTION OF TAXES, NEW YORK, December 1, 1906.

NOTICE TO TAXPAYERS.

UNDER THE PROVISIONS OF SECTION 919 of the Greater New York Charter (chapter 378, Laws of 1897), notice is hereby given to all persons or corporations who have omitted to pay their taxes, "To pay the same in the borough in which the property is located," as follows:

Borough of Manhattan, No. 57 Chambers street, Manhattan, N. Y.;

Borough of The Bronx, corner Third and Tremont avenues, The Bronx, N. Y.;

Borough of Brooklyn, Rooms 2, 4, 6 and 8, Municipal Building, Brooklyn, N. Y.;

Borough of Queens, corner Jackson avenue and Fifth street, Long Island City, N. Y.;

Borough of Richmond, Borough Hall, St. George, Staten Island, N. Y.

—and that under the provisions of section 916 of said Charter, "If any such tax shall remain unpaid on the first day of December, it shall be the duty of the Receiver of Taxes to charge, receive and collect upon such tax so remaining unpaid on that day, in addition to the amount of such tax, one per centum on the amount thereof, and to charge, receive and collect upon such tax so remaining unpaid on the first day of January thereafter, interest upon the amount thereof, at the rate of seven per centum per annum, to be calculated from the day on which said taxes became due and payable (October 1, 1906), as provided by section nine hundred and fourteen of this act, to the date of payment.

DAVID E. AUSTEN,
Receiver of Taxes.

d1,31

CORPORATION SALE OF TAX CERTIFICATE.

PUBLIC NOTICE IS HEREBY GIVEN that the Commissioners of the Sinking Fund of The City of New York, by virtue of the powers vested in them by law, will offer for sale at public auction on

TUESDAY, JANUARY 8, 1907

at 12 o'clock m., at the Comptroller's office, No. 280 Broadway, Borough of Manhattan, City of New York, all the right, title and interest of The City of New York in and to a certain tax sale certificate, registered in the office of the Collector of Assessments and Arrears in Liber 83 of tax sales by the certificate No. 5033, being for the sale for the non-payment of taxes on Lot No. 33 in Block 99 of the Twenty-fourth Ward of the Borough of Brooklyn, now known as Lot No. 39, in Block 1300, Section 5, on the tax maps of the Borough of Brooklyn.

The minimum or upset price at which the certificate is to be sold is hereby appraised and fixed at four hundred and seventy-one dollars and forty-four cents ($471.44), and the Comptroller is hereby authorized to take the necessary steps for making such sale upon the following

TERMS AND CONDITIONS.

The highest bidder will be required to pay the full amount due on said certificate as purchase money at the time of the sale, which sum shall not be less than four hundred and seventy-one dollars and forty-four cents ($471.44), and in addition thereto the purchaser shall pay the auctioneer's fees on such sale.

Upon the payment of the amount bid at such sale, together with the auctioneer's fees, the Comptroller is hereby authorized to execute and deliver an assignment of the said certificate to the purchaser, which shall be taken by the purchaser without recourse.

The Comptroller may at his option resell the certificate if the successful bidder shall fail to comply with the terms of the sale, and the person failing to comply therewith will be held liable for the cost and expense of any such resale.

The right to reject any bid is reserved.

By order of the Commissioners of the Sinking Fund under resolution adopted at a meeting of the Board held November 21, 1906.

H. A. METZ,
Comptroller.

City of New York, Department of Finance, Comptroller's office, November 28, 1906.

n28,j8

INTEREST ON BONDS AND STOCKS OF THE CITY OF NEW YORK.

THE INTEREST DUE ON JANUARY 1, 1907, on the Registered Bonds and Stock of The City of New York will be paid on January 2, 1907, by the Comptroller, at his office, Room 27, Stewart Building, corner of Broadway and Chambers street.

The Transfer Books thereof will be closed from December 15, 1906, to January 2, 1907.

The interest due on January 1, 1907, on the Coupon Bonds of the late City of Brooklyn will be paid on January 2, 1907, by the Nassau National Bank of Brooklyn, No. 26 Court street.

The interest due January 1, 1907, on the Coupon Bonds of Corporations in Queens and Richmond Counties will be received on January 2, 1907, for payment by the Comptroller at his office, Room 37, Stewart Building, corner of Broadway and Chambers street.

HERMAN A. METZ,
Comptroller.

City of New York—Department of Finance, Comptroller's Office, November 26, 1906.

n27,d31

DEPARTMENT OF DOCKS AND FERRIES.

OFFICE OF THE DEPARTMENT OF DOCKS AND FERRIES, PIER "A," FOOT OF BATTERY PLACE, NORTH RIVER, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Commissioner of Docks at the above office until 12 o'clock m., on

WEDNESDAY, JANUARY 2, 1907.
Borough of Manhattan.

CONTRACT NO. 1039 (CLASS II.).

FOR FURNISHING ALL THE LABOR AND MATERIALS REQUIRED FOR FURNISHING AND DELIVERING ABOUT 7,500 CUBIC YARDS OF BROKEN STONE.

The time for the completion of the work and the full performance of the contract is on or before the expiration of 180 calendar days.

The amount of security required is Three Thousand Dollars.

The bids will be compared and the contract awarded at a lump or aggregate sum.

Delivery will be required to be made at the time and in the manner and in such quantities as may be directed.

Blank forms and further information may be obtained and the plans and drawings may be seen at the office of the said Department.

J. A. BENSEL,
Commissioner of Docks.

Dated December 14, 1906.

d20,j2

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

OFFICE OF THE DEPARTMENT OF DOCKS AND FERRIES, PIER "A," FOOT OF BATTERY PLACE, NORTH RIVER, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Commissioner of Docks at the above office until 12 o'clock m. on

FRIDAY, DECEMBER 28, 1906.
Borough of The Bronx.

CONTRACT NO. 1036.

FOR FURNISHING ALL THE LABOR AND MATERIALS REQUIRED FOR PREPARING FOR AND BUILDING A CONCRETE SEA-WALL AND PLATFORM ON PILES AT THE EASTERLY SIDE OF NORTH BROTHER ISLAND, EAST RIVER.

The time for the completion of the work and the full performance of the contract is on or before the expiration of 150 calendar days.

The amount of security required is Twenty-two Thousand Four Hundred Dollars ($22,400).

Bidders shall state a price for each class, and, for the purpose of comparing the bids, one aggregate price for the whole work described and specified, as the contract is entire and for a complete job, and if awarded will be awarded to the bidder whose bid is regular in all respects and is the lowest for doing all the work comprised in both classes.

Work will be required to be done at the time and in the manner and in such quantities as may be directed.

Blank forms and further information may be obtained and the plans and drawings may be seen at the office of the said Department.

J. A. BENSEL,
Commissioner of Docks.

Dated December 14, 1906.

d15,26

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

DEPARTMENT OF DOCKS AND FERRIES, PIER "A," NORTH RIVER, NEW YORK, March 31, 1904.

THE COMMISSIONER HAS FIXED THE amounts of bonds required on contracts awarded by this Department, as follows:

On all contracts for supplies, 40 per cent. of the estimated cost;

On all contracts, other than contracts for supplies, where the estimated cost is not over $200,000, 40 per cent. of the estimated cost;

On all contracts, other than contracts for supplies, where the estimated cost is over $200,000, but not over $1,000,000, 25 per cent. of the estimated cost;

On all contracts, other than contracts for supplies, where the estimated cost is over $1,000,000, 20 per cent. of the estimated cost.

JOSEPH W. SAVAGE,
Secretary.

BOROUGH OF RICHMOND.

OFFICE OF THE PRESIDENT OF THE BOROUGH OF RICHMOND, BOROUGH HALL, ST. GEORGE, NEW BRIGHTON, NEW YORK CITY.

SEALED BIDS OR ESTIMATES WILL BE received by the President of the Borough of Richmond at the above office until 12 o'clock m. on

THURSDAY, DECEMBER 27, 1906.
Borough of Richmond.

No. 1. FOR FURNISHING ALL THE LABOR AND MATERIALS REQUIRED FOR SHOEING THE HORSES IN STABLE "A" OF THE BUREAU OF STREET CLEANING.

The Superintendent's estimate of the number of horses to be shod per month is as follows:

33 draught horses.
9 light driving horses.

The time for the completion of the work and the full performance of the contract is by or before December 31, 1907.

The amount of security required is Four Hundred and Fifty Dollars ($450).

The contracts must be bid for separately, and the bids will be compared and the contract awarded at a lump or aggregate sum for each contract.

Bidders are requested to make their bids or estimates upon the blank form prepared by the President, a copy of which, with the proper envelope in which to inclose the bid, together with a copy of the contract, including the specifications, in the form approved by the Corporation Counsel, can be obtained upon application therefor at the office of the said President. The plans and drawings may be seen and other information obtained at the office of the Commissioner of Public Works of the Borough of Richmond, Borough Hall, St. George, New Brighton, The City of New York.

GEORGE CROMWELL,
President.

The City of New York December 3, 1906.

d12,27

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

OFFICE OF THE PRESIDENT OF THE BOROUGH OF RICHMOND, BOROUGH HALL, ST. GEORGE, NEW BRIGHTON, NEW YORK CITY.

SEALED BIDS OR ESTIMATES WILL BE received by the President of the Borough of Richmond at the above office until 12 o'clock m. on

THURSDAY, DECEMBER 27, 1906.
Borough of Richmond.

No. 1. FOR CONSTRUCTING A SYSTEM OF SEWERS AND APPURTENANCES IN SEWERAGE DISTRICT NO. 6A, ARROCHAR WATERSHED, FOURTH WARD, BOROUGH OF RICHMOND, CITY OF NEW YORK, TOGETHER WITH ALL WORK INCIDENTAL THERETO.

The Engineer's estimate of the quantity and quality of the material, and the nature and extent, as near as possible, of the work required is as follows:

22 linear feet of reinforced concrete outfall sewer, including apron, all complete, as per section on plan of the work.
272 linear feet of reinforced concrete sewer (flat top), all complete, as per section on plan of the work.
705 linear feet of reinforced concrete sewer of 6 feet 4 inches interior diameter, all complete, as per section on plan of the work.
102 linear feet of reinforced concrete sewer, Class A, of 4 feet 6 inches by 6 feet 9 inches interior diameter, all complete, as per section on plan of the work.
36 linear feet of reinforced concrete sewer, Class B, of 4 feet 6 inches by 6 feet 9 inches interior diameter, all complete, as per section on plan of the work.
210 linear feet of reinforced concrete sewer, Class A, of 4 feet 4 inches by 6 feet 6 inches interior diameter, all complete, as per section on plan of the work.
25 linear feet of reinforced concrete sewer, Class B, of 4 feet 4 inches by 6 feet 6 inches interior diameter, all complete, as per section on plan of the work.
1,187 linear feet of reinforced concrete sewer, Class A, of 3 feet 10 inches by 5 feet 9 inches interior diameter, all complete, as per section on plan of the work.
300 linear feet of reinforced concrete sewer, Class B, of 3 feet 10 inches by 5 feet 9 inches interior diameter, all complete, as per section on plan of the work.
200 linear feet of reinforced concrete sewer, Class C, of 3 feet 10 inches by 5 feet 9 inches interior diameter, all complete, as per section on plan of the work.
60 linear feet of reinforced concrete sewer, Class A, of 3 feet 8 inches by 5 feet 6 inches interior diameter, all complete, as per section on plan of the work.
50 linear feet of reinforced concrete sewer, Class B, of 3 feet 8 inches by 5 feet 6 inches interior diameter, all complete, as per section on plan of the work.
100 linear feet of reinforced concrete sewer, Class A, of 3 feet 6 inches by 5 feet 3 inches interior diameter, all complete, as per section on plan of the work.
25 linear feet of reinforced concrete sewer, Class B, of 3 feet 6 inches by 5 feet 3 inches interior diameter, all complete, as per section on plan of the work.
50 linear feet of reinforced concrete sewer, Class A, of 3 feet 2 inches by 4 feet 9 inches interior diameter, all complete, as per section on plan of the work.
98 linear feet of reinforced concrete sewer, Class B, of 3 feet 2 inches by 4 feet 9 inches interior diameter, all complete, as per section on plan of the work.

100 linear feet of reinforced concrete sewer, Class C, of 3 feet 2 inches by 4 feet 9 inches interior diameter, all complete, as per section on plan of the work.
100 linear feet of reinforced concrete sewer, Class B, of 3 feet by 4 feet 6 inches interior diameter, all complete, as per section on plan of the work.
147 linear feet of reinforced concrete sewer, Class C, of 3 feet by 4 feet 6 inches interior diameter, all complete, as per section on plan of the work.
142 linear feet of reinforced concrete sewer, Class B, of 2 feet 4 inches by 3 feet 6 inches interior diameter, all complete, as per section on plan of the work.
100 linear feet of reinforced concrete sewer, Class C, of 2 feet 4 inches by 3 feet 6 inches interior diameter, all complete, as per section on plan of the work.
128 linear feet of reinforced concrete sewer, Class B, of 2 feet 2 inches by 3 feet 3 inches interior diameter, all complete, as per section on plan of the work.
87 linear feet of reinforced concrete sewer, Class C, of 2 feet 2 inches by 3 feet 3 inches interior diameter, all complete, as per section on plan of the work.
490 linear feet of reinforced concrete sewer, Class B, of 1 foot 8 inches by 2 feet 6 inches interior diameter, all complete, as per section on plan of the work.
682 linear feet of salt-glazed vitrified stoneware pipe sewer of 12 inches interior diameter, all complete, as per section on plan of the work.
29 reinforced concrete receiving basins of the circular pattern, with 1¼-inch galvanized wrought iron bars and iron traps, all complete, as shown on plan of the work, on file in the office of the Commissioner of Public Works.
2 special manholes, complete, as per section on plan of the work.
27 manholes, complete, as per section on plan of the work.
1 drop manhole on 4 feet 6 inches by 6 feet 9 inches sewer, as per section on plan of the work.
3 drop manholes, complete, as per section on plan of the work on pipe sewer junction.
1 standard manhole, head and cover in place.
5,800 linear feet of piles, furnished, driven and cut.
25,400 feet (B. M.) of yellow pine foundation timber, and planking in place and secured.
36,000 feet (B. M.) of spruce planking in place and secured.
10 cubic yards of concrete in place.
4 cubic yards of brick masonry.
10 cubic yards of rip-rap in place.
40 cubic yards of additional excavation.
50 cubic yards of additional filling.
228 linear feet of cast iron pipe, of 20 inches interior diameter, not less than 190 pounds per foot, including pile and rip-rap foundation and guards, furnished, laid and caulked.
2,000 feet (B. M.) of sheeting, retained.
200 square feet of additional reinforcing metal, equal and similar to Nos. 4 and 10 expanded metal, furnished and placed.
300 pounds of additional reinforcing metal (steel bars), furnished and placed.
570 linear feet of 5-inch by 16-inch bluestone curb, furnished and set in concrete.
25 linear feet of 15-inch vitrified pipe, furnished and laid.
40 linear feet of 12-inch vitrified pipe, furnished and laid.

The time for the completion of the work and the full performance of the contract is 225 days.

The amount of security required is Twenty-seven Thousand Dollars ($27,000).

The contracts must be bid for separately, and the bids will be compared and the contract awarded at a lump or aggregate sum for each contract.

Bidders are requested to make their bids or estimates upon the blank form prepared by the President, a copy of which, with the proper envelope in which to inclose the bid, together with a copy of the contract, including the specifications, in the form approved by the Corporation Counsel, can be obtained upon application therefor at the office of the said President. The plans and drawings may be seen and other information obtained at the office of the Engineer of Construction of the Borough of Richmond, Borough Hall, New Brighton, Borough of Richmond.

GEORGE CROMWELL,
President.

The City of New York, November 27, 1906.
d11,27

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

OFFICE OF THE PRESIDENT OF THE BOROUGH OF RICHMOND, BOROUGH HALL, ST. GEORGE, NEW BRIGHTON, NEW YORK CITY.

SEALED BIDS OR ESTIMATES WILL BE received by the President of the Borough of Richmond at the above office until 12 o'clock m. on

THURSDAY, DECEMBER 27, 1906.

Borough of Richmond.

No. 1. FOR FURNISHING PLANS FOR THE FOUNDATIONS, BUILDING, RUNWAY, CONNECTING FLUES AND CHIMNEY OF A REFUSE DESTRUCTOR TO BE BUILT AT WEST NEW BRIGHTON, IN ADDITION TO FURNISHING ALL PLANS, SPECIFICATIONS, SUPERVISION, LABOR, MATERIALS AND APPURTENANCES NECESSARY FOR THE ERECTION AND COMPLETION OF THE FURNACE AND STEAM BOILER PORTION OF THE PROPOSED WEST NEW BRIGHTON DESTRUCTOR AT WEST NEW BRIGHTON, BOROUGH OF RICHMOND, THE CITY OF NEW YORK, U. S. A.

The specifications require an incinerator or destructor capable of burning in a sanitary and economical manner sixty (60) tons per 24 hours of mixed refuse containing ashes, garbage and rubbish.

The destructor portion of the installation shall be erected complete by the contractor, including furnace, steam boiler, forced draught apparatus, etc.

No experimental or untried installations will be considered.

The time for the completion of the work and the full performance of the contract is 90 days.

The amount of security required is 50 per cent. of the bid or estimate.

Contract for the building based on such plans as may be selected will be subsequently made.

Bidders are requested to make their bids or estimates upon the blank form prepared by the President, a copy of which, with the proper envelope in which to inclose the bid, together with a copy of the contract, including the specifications, in the form approved by the Corporation Counsel, can be obtained upon application therefor at the office of the said President. The plans and drawings may be seen and other information obtained at the office of the Commissioner of Public Works of the Borough of Richmond, Borough Hall, St. George, New Brighton, The City of New York.

GEORGE CROMWELL,
President.

The City of New York, November 16, 1906.
n20,d27

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

OFFICIAL PAPERS.

Morning—"The Sun," "The New York Times."

Evening—"The Globe," "The Evening Mail."

Weekly—"Tammany Times," "Real Estate Record and Guide."

German—"Staats-Zeitung."

Designated by the Board of City Record, January 22, 1906. Amended March 1, 1906, and November 20, 1906.

AQUEDUCT COMMISSIONERS.

THE AQUEDUCT COMMISSIONERS' OFFICE, ROOM 207 STEWART BUILDING, No. 280 BROADWAY, NEW YORK, December 18, 1906.

FLASHBOARD EQUIPMENT FOR NEW CROTON DAM.

SEALED BIDS OR PROPOSALS WILL BE received by the Aqueduct Commissioners at the above office until 12 o'clock noon, on

TUESDAY, JANUARY 8, 1907

at which place and hour the bids will be publicly opened and read; the award of the contract, if awarded, will be made by the Aqueduct Commissioners as soon thereafter as practicable, for furnishing and erecting flashboard equipment on the spillway of the New Croton Dam. The dam is located in the Town of Cortlandt, Westchester County, New York, about 2½ miles from Croton-on-Hudson, on the New York Central and Hudson River Railroad, Hudson River Division, approximately 35 miles from New York.

The length of the spillway is approximately 1,000 feet. The flashboard equipment consists of flashboards, cast-iron bents, a narrow gauge track, a car, a concrete walk, galvanized iron railings, a concrete storage house and other minor accessories.

The security required will be Six Thousand Dollars.

The contract will be required to be completed within 120 consecutive calendar days following the month in which the contract is signed by the Commissioners.

The work is authorized by chapter 490, Laws of 1883, of the State of New York, and the amendments thereto.

No bid will be received or considered unless accompanied by a certified check upon one of the State or National banks in The City of New York, drawn to the order of the Comptroller, or money to the amount of $500.

Copies of a pamphlet, containing further information for bidders, form of proposal, forms of contract and bond approved by the Corporation Counsel, and the specifications and contract drawings can be obtained at the office of the Aqueduct Commissioners on application in person or by mail.

JOHN F. COWAN,
President.

HARRY W. WALKER,
Secretary.
d19,j8

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

FIRE DEPARTMENT.

HEADQUARTERS OF THE FIRE DEPARTMENT OF THE CITY OF NEW YORK, Nos. 157 AND 159 EAST SIXTY-SEVENTH STREET, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Fire Commissioner at the above office until 10.30 o'clock a. m., on

MONDAY, DECEMBER 31, 1906.

Boroughs of Manhattan and The Bronx.

No. 1. FOR FURNISHING AND DELIVERING ONE THOUSAND (1,000) TONS OF ANTHRACITE COAL FOR COMPANIES LOCATED SOUTH OF FIFTY-NINTH STREET, BOROUGH OF MANHATTAN.

The time for the delivery of the articles, materials and supplies and the performance of the contract is by or before May 1, 1907.

The amount of security required is Two Thousand Eight Hundred Dollars ($2,800).

No. 2. FOR FURNISHING AND DELIVERING FOURTEEN THOUSAND (14,000) GALLONS OF KEROSENE OIL, FOR COMPANIES.

The time for the delivery of the articles, materials and supplies and the performance of the contract is by or before December 31, 1907.

The amount of security required is Seven Hundred Dollars ($700).

The bidder will state the price of each item or article contained in the specifications or schedules herein contained or hereto annexed, per pound, ton, dozen, gallon, yard or other unit of measure, by which the bids will be tested. The extensions must be made and footed up, as the bids will be read from the total. The bids will be compared and the contract awarded at a lump or aggregate sum for each contract.

Delivery will be required to be made at the time and in the manner and in such quantities as may be directed.

Blank forms and further information may be obtained at the office of the Fire Department, Nos. 157 and 159 East Sixty-seventh street, Manhattan.

FRANCIS J. LANTRY,
Fire Commissioner.

Dated December 17, 1907.
d18,31

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

HEADQUARTERS OF THE FIRE DEPARTMENT OF THE CITY OF NEW YORK, Nos. 157 AND 159 EAST SIXTY-SEVENTH STREET, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Fire Commissioner at the above office until 10.30 o'clock a. m. on

MONDAY, DECEMBER 31, 1906.

Boroughs of Manhattan and The Bronx.

No. 1. FOR FURNISHING AND DELIVERING HAY, STRAW, OATS, BRAN, OIL MEAL AND SALT FOR COMPANIES IN THE BOROUGH OF MANHATTAN.

The time for the delivery of the articles, materials and supplies and the performance of the contract is by or before July 31, 1907.

The amount of security required is fifty per cent. (50%) of the amount of the bid or estimate.

No. 2. FOR FURNISHING AND DELIVERING HAY, STRAW, OATS, BRAN, OIL MEAL AND SALT FOR COMPANIES IN THE BOROUGH OF THE BRONX.

The time for the delivery of the articles, materials and supplies and the performance of the contract is by or before July 31, 1907.

The amount of security required is fifty per cent. (50%) of the amount of the bid or estimate.

Borough of Richmond.

No. 3. FOR FURNISHING AND DELIVERING HAY, STRAW, OATS, BRAN, OIL MEAL AND SALT FOR COMPANIES IN THE BOROUGH OF RICHMOND.

The time for the delivery of the articles, materials and supplies and the performance of the contract is by or before July 31, 1907.

The amount of security required is fifty per cent. (50%) of the amount of the bid or estimate.

The bidder will state the price of each item or article contained in the specifications or schedules herein contained or hereto annexed, per pound, ton, dozen, gallon, yard or other unit of measure, by which the bids will be tested. The extensions must be made and footed up, as the bids will be read from the total.

The bids will be compared and the contract awarded at a lump or aggregate sum for each contract.

Delivery will be required to be made at the time and in the manner and in such quantities as may be directed.

Blank forms and further information may be obtained at the office of the Fire Department, Nos. 157 and 159 East Sixty-seventh street, Manhattan.

FRANCIS J. LANTRY,
Fire Commissioner.

Dated December 17, 1906.
d18,31

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

HEADQUARTERS OF THE FIRE DEPARTMENT OF THE CITY OF NEW YORK, Nos. 157 AND 159 EAST SIXTY-SEVENTH STREET, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Fire Commissioner at the above office until 10.30 o'clock a. m., on

THURSDAY, DECEMBER 27, 1906.

Boroughs of Manhattan and The Bronx.

No. 1. FOR FURNISHING AND DELIVERING THREE THOUSAND (3,000) FEET OF THREE-INCH RUBBER FIRE HOSE.

The time for the delivery of the articles, materials and supplies and the performance of the contract is sixty (60) days.

The amount of security required is Two Thousand Three Hundred Dollars ($2,300).

The bidder will state the price of each item or article contained in the specifications or schedules herein contained or hereto annexed, per pound, ton, dozen, gallon, yard or other unit of measure by which the bids will be tested. The extensions must be made and footed up.

The bids will be compared and the contract awarded at a lump or aggregate sum.

Delivery will be required to be made at the time and in the manner and in such quantities as may be directed.

Blank forms and further information may be obtained at the office of the Fire Department, Nos. 157 and 159 East Sixty-seventh street, Manhattan.

FRANCIS J. LANTRY,
Fire Commissioner.

Dated December 14, 1906.
d15,27

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

HEADQUARTERS OF THE FIRE DEPARTMENT OF THE CITY OF NEW YORK, Nos. 157 AND 159 EAST SIXTY-SEVENTH STREET, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Fire Commissioner at the above office until 10.30 o'clock a. m. on

MONDAY, DECEMBER 31, 1906.

Boroughs of Manhattan and The Bronx.

No. 1. FOR FURNISHING AND DELIVERING FOURTEEN THOUSAND (14,000) SACKS OF NORTH CAROLINA PINE OR GEORGIA YELLOW PINE KINDLING WOOD.

The time for the delivery of the articles, materials and supplies and the performance of the contract is by or before February 1, 1908.

The amount of security required is Two Thousand Dollars ($2,000).

The bidder will state the price of each item or article contained in the specifications or schedules herein contained or hereto annexed, per pound, ton, dozen, gallon, yard or other unit of measure, by which the bids will be tested. The extensions must be made and footed up, as the bids will be read from the total. The bids will be compared and the contract awarded at a lump or aggregate sum.

Delivery will be required to be made at the time and in the manner and in such quantities as may be directed.

Blank forms and further information may be obtained at the office of the Fire Department, Nos. 157 and 159 East Sixty-seventh street, Manhattan.

FRANCIS J. LANTRY,
Fire Commissioner.

Dated December 17, 1906.
d18,31

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

HEADQUARTERS OF THE FIRE DEPARTMENT OF THE CITY OF NEW YORK, Nos. 157 AND 159 EAST SIXTY-SEVENTH STREET, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Fire Commissioner at the above office until 10.30 o'clock a. m. on

THURSDAY, DECEMBER 27, 1906.

Boroughs of Manhattan and The Bronx.

No. 1. FOR FURNISHING AND DELIVERING FIRE ALARM TELEGRAPH APPARATUS.

The time for the delivery of the articles, materials and supplies and the performance of the contract is by or before July 31, 1907.

The amount of security required is fifty per cent. (50%) of the amount of the bid or estimate.

Borough of Richmond.

No. 2. FOR FURNISHING AND DELIVERING FIRE ALARM TELEGRAPH APPARATUS AND SUPPLIES.

The time for the delivery of the articles, materials and supplies and the performance of the contract is sixty (60) days.

The amount of security required is fifty per cent. (50%) of the amount of the bid or estimate.

No. 3. FOR FURNISHING AND DELIVERING FIRE ALARM TELEGRAPH APPARATUS AND SUPPLIES.

The time for the delivery of the articles, materials and supplies and the performance of the contract is sixty (60) days.

The amount of security required is fifty per cent. (50%) of the amount of the bid or estimate.

The bidder will state the price of each item or article contained in the specifications or schedules herein contained or hereto annexed, per pound, ton, dozen, gallon, yard or other unit of measure, by which the bids will be tested. The extensions must be made and footed up, as the bids will be read from the total for each item (class) and awards made to the lowest bidder on each item (class); or the bids will be compared and the contract awarded at a lump or aggregate sum for each contract.

Delivery will be required to be made at the time and in the manner and in such quantities as may be directed.

Blank forms and further information may be obtained and the plans and drawings may be seen at the office of the Fire Department, Nos. 157 and 159 East Sixty-seventh street, Manhattan.

FRANCIS J. LANTRY,
Fire Commissioner.

Dated December 14, 1906.
d15,27

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

ARMORY COMMISSIONERS.

ARMORY BOARD, HALL OF RECORDS, CHAMBERS AND CENTRE STREETS.

SEALED BIDS OR ESTIMATES WILL BE received at the office of the Mayor, Chairman of the Armory Board, in The City of New York, until 2 p. m.,

THURSDAY, DECEMBER 27, 1906.

FOR EQUIPMENTS AND MISCELLANEOUS ARTICLES FOR COMPLETING THE NEW ARMORY FOR THE SECOND BATTALION, NAVAL MILITIA, N. Y., IN THE BOROUGH OF BROOKLYN.

Article No. 1.

Security required, Two Thousand Dollars.

Deposit to be made with the bid, One Hundred Dollars.

Time allowed for doing the work, ninety (90) working days.

Articles Nos. 2 and 4.

Security required, Four Hundred Dollars.

Deposit to be made with the bid, Twenty Dollars.

Time allowed for doing the work, sixty (60) working days.

Article No. 3.

Security required, Eight Hundred Dollars.

Deposit to be made with the bid, Forty Dollars.

Time allowed for doing the work ninety (90) working days.

Article No. 5. FOR FURNITURE AND FITTINGS IN THE FIRST SIGNAL CORPS QUARTERS, IN THE BOROUGH OF MANHATTAN.

Security required, Five Thousand Dollars.

Deposit to be made with the bid, Two Hundred and Fifty Dollars.

Time allowed for doing the work, sixty (60) working days.

Article No. 6. FOR LABOR AND MATERIALS REQUIRED IN THE INSTALLATION OF ADDITIONS TO SQUADRON C ARMORY, BEDFORD AVENUE, BETWEEN UNION AND PRESIDENT STREETS, BOROUGH OF BROOKLYN.

Security required, Five Hundred Dollars.

Deposit to be made with the bid, Twenty-five Dollars.

Time allowed for doing the work, forty (40) working days.

The bids will be compared and the contracts awarded at a lump or aggregate sum for each contract.

Bidders are requested to make their bids or estimates upon the blank form prepared by the Armory Board, a copy of which, with the proper envelope in which to inclose the bid, together with a copy of the contract, including the specifications, in the form approved by the Corporation Counsel, can be obtained upon application at the office of the Armory Board, Room 6, New Hall of Records (basement), Borough of Manhattan.

For Articles Nos. 1, 2, 3 and 4 plans and specifications may be examined at the office of Lord & Hewlett, No. 16 East Twenty-third street, Borough of Manhattan. For Article No. 5 plans and specifications may be examined at the office of Clinton & Russell, No. 32 Nassau street, Borough of Manhattan.

For Article No. 6 specifications may be examined at the office of the Armory Board, Room 6 (basement), Hall of Records, Chambers and Centre streets, Borough of Manhattan.

THE ARMORY BOARD,
GEORGE B. McCLELLAN,
Mayor;
JAMES McLEER,
Brigadier-General, Commanding Second Brigade;
GEORGE MOORE SMITH,
Brigadier-General, Commanding First Brigade;
LAWSON PURDY,
President of the Department of Taxes and Assessments.
PATRICK McGOWAN,
President of the Board of Aldermen.

The City of New York, December 11, 1906.
d11,27

☞ **See General Instructions to Bidders on the last page, last column, of the "City Record."**

POLICE DEPARTMENT.

POLICE DEPARTMENT OF THE CITY OF NEW YORK, No. 300 MULBERRY STREET.

SEALED BIDS OR ESTIMATES WILL BE received by the Police Commissioner of the Police Department of The City of New York at the above office until 10 o'clock a. m. on

FRIDAY, DECEMBER 28, 1906.

FOR COMPLETING CONTRACT EXECUTED BY THOMAS G. CARLIN JULY 29, 1904, WHICH WAS DECLARED ABANDONED:

FOR FURNISHING ALL THE LABOR AND FURNISHING AND ERECTING ALL THE MATERIALS NECESSARY TO BUILD AND

COMPLETE THE NEW STATION HOUSE, PRISON AND STABLE FOR THE SEVENTY-SECOND PRECINCT, ON THE SOUTH SIDE OF LAWRENCE AVENUE, 300 FEET EASTERLY OF THIRD STREET, BOROUGH OF BROOKLYN.

This contract is for all the work uncompleted by Thomas G. Carlin.

The time allowed for erection and completion of the entire work will be one hundred and eighty (180) working days.

The surety required will be Thirty-five Thousand Dollars ($35,000).

Bidders are particularly requested to examine the plans, specifications and location of the work before bidding, and they are expressly notified that no deviation from the specifications will be allowed, unless the same has been previously authorized by a written permission therefor obtained from the Police Commissioner.

For particulars as to the quantity and quality of the supplies or the nature and extent of the work required or of the materials to be furnished, bidders are referred to the specifications and lists of materials, supplies and apparatus to be furnished, and to the plans on file at the office of Washington Hull, Architect, No. 16 East Twenty-third street, Borough of Manhattan, where blank forms for making bids or estimates may be obtained.

The bidder shall state one aggregate price for the whole work described and specified, as the contract is entire and for a complete job.

Bidders will write out the total amount of their estimates in addition to inserting the same in figures.

Dated December 15, 1906.

THEODORE A. BINGHAM,
Police Commissioner.

d15,28

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

POLICE DEPARTMENT OF THE CITY OF NEW YORK, No. 300 MULBERRY STREET.

SEALED BIDS OR ESTIMATES WILL BE received by the Police Commissioner of the Police Department of The City of New York at the above office until 10 o'clock a. m. on

FRIDAY, DECEMBER 28, 1906.

FOR FURNISHING, DELIVERING AND SETTING UP, COMPLETE, ONE HIGH-GRADE CYLINDER PRESS, WITH ELECTRIC MOTOR ATTACHED, FOR THE POLICE DEPARTMENT OF THE CITY OF NEW YORK.

The time for the delivery of the articles, materials and supplies and the performance of the contract is sixty days.

The amount of security will be fifty per cent. (50%) of the amount of the bid or estimate.

The bids will be compared and award made to the lowest bidder.

The bidder will state the price for which he will do all the work and provide, furnish and deliver all the labor and materials mentioned and described in said contract and specifications.

For particulars as to the nature and extent of the work required or of the materials to be furnished bidders are referred to the specifications and to the plans on file in the office of the Inspector of Repairs and Supplies of the Police Department, No. 300 Mulberry street, City of New York.

Blank forms and further information may be obtained at the Central Office of the Police Department, No. 300 Mulberry street, Borough of Manhattan.

THEODORE A. BINGHAM,
Police Commissioner.

Dated December 14, 1906.

d14,28

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

POLICE DEPARTMENT OF THE CITY OF NEW YORK, No. 300 MULBERRY STREET.

SEALED BIDS OR ESTIMATES WILL BE received by the Police Commissioner of the Police Department of The City of New York at the above office until 10 o'clock a. m., on

THURSDAY, DECEMBER 27, 1906.

FOR FURNISHING, DELIVERING AND SETTING UP COMPLETE TEN STEEL LEGAL VERTICAL FILES, INDEX CABINETS.

The time for the delivery of the articles, materials and supplies and the performance of the contract is sixty days.

The amount of security will be fifty per cent. (50%) of the amount of the bid or estimate.

The bids will be compared and award made to the lowest bidder.

The bidder will state the price for which he will do all the work and provide, furnish and deliver all the labor and materials mentioned and described in said contract and specifications.

For particulars as to the nature and extent of the work required or of the materials to be furnished bidders are referred to the specifications and to the plans on file in the office of the Inspector of Repairs and Supplies of the Police Department, No. 300 Mulberry street, City of New York.

Blank forms and further information may be obtained at the Central Office of the Police Department, No. 300 Mulberry street, Borough of Manhattan.

THEODORE A. BINGHAM,
Police Commissioner.

Dated December 13, 1906.

d13,27

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

POLICE DEPARTMENT—CITY OF NEW YORK.

OWNERS WANTED BY THE PROPERTY Clerk of the Police Department of The City of New York, No. 300 Mulberry street, Room No. 9, for the following property, now in his custody, without claimants: Boats, rope, iron, lead, male and female clothing, boots, shoes, wine, blankets, diamonds, canned goods, liquors, etc.; also small amount of money taken from prisoners and found by Patrolmen of this Department.

THEODORE A. BINGHAM,
Police Commissioner.

POLICE DEPARTMENT—CITY OF NEW YORK, BOROUGH OF BROOKLYN.

OWNERS WANTED BY THE DEPUTY Property Clerk of the Police Department of The City of New York—Office, No. 209 State street, Borough of Brooklyn—for the following property, now in his custody, without claimants: Boats, rope, iron, lead, male and female clothing, boots, shoes, wine, blankets, diamonds, canned goods, liquors, etc.; also small amount of money taken from prisoners and found by Patrolmen of this Department.

THEODORE A. BINGHAM,
Police Commissioner.

DEPARTMENT OF HEALTH.

DEPARTMENT OF HEALTH, SOUTHWEST CORNER OF FIFTY-FIFTH STREET AND SIXTH AVENUE, BOROUGH OF MANHATTAN, CITY OF NEW YORK, December 21, 1906.

AT A MEETING OF THE BOARD OF Health of the Department of Health, held December 19, 1906, the following resolutions were adopted:

Resolved, That section 96 of the Sanitary Code be and the same is hereby amended so as to read as follows:

Section 96. The owners, lessees, tenants, occupants and managers of every building, vessel or place in or upon which a locomotive or stationary engine, furnace or boilers are used shall cause all ashes, cinders, rubbish, dirt and refuse to be removed to some proper place so that the same shall not accumulate, nor shall any person cause, suffer or allow cinders, dust, gas, steam or offensive or noisome odors to escape or be discharged from any such building, vessel or place, to the detriment or annoyance of any person or persons not being therein or thereupon engaged.

Resolved, That the following sanitary ordinance be and the same is hereby adopted and added to the Sanitary Code, to be known as section 181:

Section 181. No person shall cause, suffer or allow dense smoke to be discharged from any building, vessel, stationary or locomotive engine, place or premises within The City of New York, or upon the waters adjacent thereto, within the jurisdiction of said City. All persons participating in any violation of this provision, either as proprietors, owners, tenants, managers, superintendents, captains, engineers, firemen or otherwise, shall be severally liable therefor.

Respectfully,
EUGENE W. SCHEFFER,
Secretary.

d22,29

DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY.

DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY, ROOM 1536, NOS. 13 TO 21 PARK ROW, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Commissioner of Water Supply, Gas and Electricity at the above office until 2 o'clock p. m., on

MONDAY, DECEMBER 31, 1906.

FOR FURNISHING, PUTTING IN PLACE AND MAINTAINING FIVE HUNDRED (500) GAS REGULATORS, FROM JANUARY 1, 1907, TO DECEMBER 31, 1907, BOTH INCLUSIVE.

For furnishing gas regulators in public buildings in The City of New York, in the Boroughs of Manhattan, The Bronx and Brooklyn.

FOR FURNISHING STEAM FOR HEATING OR POWER PURPOSES TO CERTAIN PUBLIC BUILDINGS, FROM JANUARY 1, 1907, TO DECEMBER 31, 1907, BOTH INCLUSIVE.

For furnishing steam to public buildings in The City of New York, in the Boroughs of Manhattan and The Bronx.

The amount of security required for furnishing gas regulators is fifty per cent (50%) of the amount of the bid or estimate.

For furnishing steam the amount of security required is twenty-five per cent. (25%) of the amount of the bid or estimate.

The bidder will state the price of each item or article contained in the specifications or schedules, per regulator, in the contract for gas, regulators, and per thousand pounds of steam as measured on a meter, or per building per month, or other unit of measure by which the bids will be tested.

Blank forms may be obtained at the office of the Department, Room 1319.

JOHN H. O'BRIEN,
Commissioner.

New York, December 14, 1906.

d18,31

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY, ROOM 1536, NOS. 13 TO 21 PARK ROW, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Commissioner of Water Supply, Gas and Electricity at the above office until 2 o'clock p. m. on

MONDAY, DECEMBER 31, 1906.

FOR FURNISHING GAS FOR AND TO THE PUBLIC LAMPS ON THE STREETS, SUPPLYING GAS, ETC., FOR NEW LAMPS WHEN REQUIRED, FOR MAKING CERTAIN REPAIRS TO LAMP-POSTS, AND FOR FURNISHING GAS TO PUBLIC BUILDINGS, FROM JANUARY 1, 1907, TO DECEMBER 31, 1907, BOTH INCLUSIVE.

For lighting streets, avenues, public buildings, parks and public places in The City of New York.

No. 1. Borough of Manhattan.
No. 2. Borough of The Bronx.
No. 3. Borough of Brooklyn.
No. 4. Borough of Queens.
No. 5. Borough of Richmond.

FOR FURNISHING GAS LAMPS, ETC., ON THE STREETS, AND SO ON, AND FOR CONNECTING, LIGHTING, EXTINGUISHING, CLEANING, REPAIRING AND MAINTAINING THE SAME, AND ALSO LAMPS BELONGING TO THE CITY, SUPPLYING NEW LAMPS WHEN REQUIRED, AND FOR FURNISHING BURNERS AND APPLIANCES FOR IMPROVED SYSTEM OF LIGHTING ON THE STREETS, AVENUES, PARKS AND PUBLIC PLACES, FROM JANUARY 1, 1907, TO DECEMBER 31, 1907, BOTH INCLUSIVE.

For furnishing gas lamps, etc., on the streets, and so on, in The City of New York.

No. 1. Borough of Manhattan.
No. 2. Borough of The Bronx.
No. 3. Borough of Brooklyn.
No. 4. Borough of Queens.
No. 5. Borough of Richmond.

FOR FURNISHING NAPHTHA OR SIMILAR ILLUMINATING MATERIAL FOR THE PUBLIC LAMPS USING SAME, AND FOR FURNISHING, LIGHTING, EXTINGUISHING, CLEANING, REPAIRING AND MAINTAINING SUCH LAMPS, SUPPLYING NAPHTHA, ETC., FOR NEW LAMPS, FOR FURNISHING NEW LAMPS AS REQUIRED, FOR FURNISHING OR MAKING CERTAIN REPAIRS TO LAMP-POSTS, AND FOR FURNISHING BURNERS AND APPLIANCES OF IMPROVED SYSTEM OF LIGHTING STREETS, AVENUES, PARKS AND PUBLIC PLACES, FROM JANUARY 1, 1907, TO DECEMBER 31, 1907, BOTH INCLUSIVE.

For furnishing naphtha, etc., and lighting streets, avenues, parks and public places in The City of New York.

No. 1. Borough of Manhattan.
No. 2. Borough of The Bronx.
No. 3. Borough of Brooklyn.
No. 4. Borough of Queens.
No. 5. Borough of Richmond.

FOR FURNISHING, OPERATING AND MAINTAINING ELECTRIC LAMPS FOR LIGHTING STREETS, AVENUES, PUBLIC BUILDINGS, PARKS AND PUBLIC PLACES, FROM JANUARY 1, 1907, TO DECEMBER 31, 1907, BOTH INCLUSIVE.

For lighting streets, avenues, public buildings, parks and public places in The City of New York.

No. 1. Borough of Manhattan.
No. 2. Borough of The Bronx.
No. 3. Boroughs of Manhattan and The Bronx.
No. 4. Borough of Brooklyn.
No. 5. Borough of Queens.
No. 6. Borough of Richmond.

The amount of the security required is twenty-five (25) per cent. of the amount of the bid or estimate, except "for furnishing gas lamps," where the security required is fifty (50) per cent. of the amount of the bid or estimate.

The bidder will state the price of each item or article contained in the specifications or schedules, per lamp, lamp-post, column, service-pipe, stand-pipe or other unit of measure, by which the bids will be tested.

Blank forms may be obtained at the office of the Department, Room 1319.

JOHN H. O'BRIEN,
Commissioner.

New York, December 14, 1906.

d17,31

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY, ROOM 1536, NOS. 13 TO 21 PARK ROW, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Commissioner of Water Supply, Gas and Electricity at the above office until 2 o'clock p. m. on

FRIDAY, DECEMBER 28, 1906,
Borough of Queens.

FOR FURNISHING, DELIVERING AND LAYING WATER MAINS IN BORDEN AND BEEBEE AVENUES, AND IN VAN DAM, BARTOW, LATHROP, BLACKWELL, BRIELL, ALBERT AND KOUWENHOVEN STREETS, LONG ISLAND CITY; IN CENTRAL, WILSON, CROCHERON AND MAPLE AVENUES, AND IN ASH, STATE, TWENTY-SECOND, LEAVITT, FOURTEENTH AND TWENTY-FOURTH STREETS, AND IN QUEENS AVENUE, FLUSHING, THIRD WARD; IN OLD HOUSE LANDING ROAD, LITTLE NECK; IN CENTRE DRIVE, HILLSIDE AVENUE; WEST DRIVE, PINE STREET AND BROADWAY, DOUGLASTON; IN FIRST, THIRD, EIGHTH, AVENUE C AND COLLEGE AVENUES; IN SCHLEICHER COURT, NORTH SEVENTEENTH AND NORTH THIRTEENTH STREETS, COLLEGE POINT; IN SEVENTH, ELEVENTH AND FOURTEENTH AVENUES; IN NINTH, THIRTEENTH, EIGHTEENTH AND TWENTY-SECOND STREETS, AND IN WILLETTS POINT ROAD, WHITESTONE; IN CROCHERON AND MONTAUK AVENUES; IN SECOND AND THIRD STREETS, AND BAYSIDE BOULEVARD, BAYSIDE.

The time allowed for doing and completing the work will be three hundred working days.

The security required will be Thirty Thousand Dollars ($30,000).

All goods must be delivered as directed. The weight, measure, etc., will be allowed as received at points of delivery.

Delivery will be required to be made from time to time and in such quantities and places as may be directed by the Engineer.

Bidders are requested to make their bids or estimates upon the blank form prepared by the Department, a copy of which, with the proper envelope in which to inclose the bid, together with a copy of the contract, including the specifications, in the form approved by the Corporation Counsel, and any further information may be obtained upon application therefor at the office of the Chief Engineer, Room 1521.

JOHN H. O'BRIEN,
Commissioner of Water Supply, Gas and Electricity.

The City of New York, December 13, 1906.

d15,28

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

DEPARTMENT OF WATER SUPPLY, GAS AND ELECTRICITY, ROOM 1536, NOS. 13 TO 21 PARK ROW, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the Commissioner of Water Supply, Gas and Electricity at the above office until 2 o'clock p. m., on

FRIDAY, DECEMBER 28, 1906.
Borough of Brooklyn.

FOR HAULING AND LAYING WATER MAINS AND APPURTENANCES IN THE BOROUGH OF BROOKLYN.

The time allowed for doing and completing the above work will be until August 1, 1907.

The amount of security required will be Twenty Thousand Dollars ($20,000).

The contractor will furnish all the materials and labor necessary and proper for the purpose, and in strict conformity with the foregoing notice, with the plans and with the hereinafter contained or hereto annexed specifications, will haul and lay water mains with the necessary stop-cocks, branches, hydrants and other appurtenances in such streets and avenues in the Borough of Brooklyn, City of New York, as he may be ordered by the Engineer and within the boundaries shown on a plan designated as Plate No. 3050 and signed by the Chief Engineer for the Borough of Brooklyn and on file in the office of the Chief Engineer. The boundaries are as follows:

District No. 1—Bounded on the north by Sterling place, Bergen street, Atlantic avenue, Granite street and county line; on the east by county line, East One Hundredth street; on the south by Vandalia avenue, Vienna avenue, Jamaica Bay, Clarendon road and Twenty-ninth Ward boundary; on the west by Louisiana avenue, East Eighty-sixth street, Twenty-ninth Ward boundary line, Flatbush avenue, Kingston avenue, Howard avenue and Stone avenue.

District No. 2—Bounded on the north by Thirty-seventh street, Twenty-ninth Ward boundary and Voorhies lane; on the east by Twenty-ninth Ward boundary, East Twenty-fifth street, Ocean avenue and Jamaica Bay; on the south by Avenue V, Sheepshead Bay, Atlantic Ocean and Gravesend Bay; on the west by Gravesend Bay and the East river.

FOR FURNISHING AND DELIVERING CHEMICALS, ETC., FOR LABORATORY.

The time for delivery of the articles, materials and supplies and the performance of the contract is ninety (90) calendar days.

The amount of security shall be Six Hundred Dollars ($600).

FOR FURNISHING AND DELIVERING ENGINEERS' AND DRAUGHTSMEN'S SUPPLIES.

The time for delivery of the articles, materials and supplies and the performance of the contract is ninety (90) calendar days.

The amount of security shall be Eight Hundred Dollars ($800).

FOR FURNISHING AND DELIVERING LUBRICATING AND ILLUMINATING OILS AND LUBRICATING GREASE.

The time for delivery of the articles, materials and supplies and the performance of the contract is until December 31, 1907.

The amount of security shall be Three Thousand Dollars ($3,000).

FOR FURNISHING AND DELIVERING PACKING, GASKETS, LAMP WICK AND ASBESTOS WICK.

The time for delivery of the articles, materials and supplies and the performance of the contract is until December 31, 1907.

The amount of security shall be Two Thousand Dollars ($2,000).

The bidder will state the price of each item or article contained in the specifications or schedules herein contained or hereto annexed, by which the bids will be tested.

The bids will be compared and each contract awarded at a lump sum for all the work, articles, materials or supplies specified and contained in the annexed specifications and schedule.

Delivery will be required to be made from time to time and in such quantities and places as may be directed.

Blank forms may be obtained at the office of the Department of Water Supply, Gas and Electricity, the Borough of Manhattan, Nos. 13 to 21 Park row, and at Room 25, Municipal Building, Borough of Brooklyn.

JOHN H. O'BRIEN,
Commissioner.

Dated December 12, 1906.

d15,28

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

BELLEVUE AND ALLIED HOSPITALS.

BELLEVUE AND ALLIED HOSPITALS DEPARTMENT OF NEW YORK CITY, TWENTY-SIXTH STREET AND FIRST AVENUE, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the President of the Board of Trustees at the above office until 3 o'clock p. m. on

TUESDAY, JANUARY 8, 1907.

FOR ALL THE LABOR AND MATERIALS REQUIRED FOR THE ERECTION AND COMPLETION OF NEW TRAINING SCHOOL FOR WOMEN NURSES, BELLEVUE HOSPITAL, SITUATED ON THE EAST RIVER, BETWEEN TWENTY-FIFTH AND TWENTY-SIXTH STREETS, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

The surety required will be One Hundred Thousand Dollars ($100,000).

The time for the completion of the work and the full performance of the contract is within four hundred and fifty (450) consecutive working days from the date of executing the contract.

The bids will be compared and the contract awarded at a lump or aggregate sum to the lowest bidder.

Blank forms may be obtained and the plans and drawings may be seen at the office of the Auditor and Contract Clerk, No. 419 East Twenty-sixth street, Borough of Manhattan, where bids and deposits are also delivered.

JOHN W. BRANNAN,
President of the Board of Trustees, Bellevue and Allied Hospitals.

d18,j8

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

BELLEVUE AND ALLIED HOSPITALS DEPARTMENT OF NEW YORK CITY, TWENTY-SIXTH STREET AND FIRST AVENUE, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS AND ESTIMATES WILL be received by the President of the Board of Trustees at the above office until 3 o'clock p. m. on

FRIDAY, DECEMBER 28, 1906.

FOR THE LEAD AND OIL PAINTING OF THE PLASTERED WALLS AND CEILING SURFACES OF THE ENTIRE INTERIOR OF THE NEW HARLEM HOSPITAL, LOCATED ON LENOX AVENUE, ONE HUNDRED AND THIRTY-FIFTH AND ONE HUNDRED AND THIRTY-SIXTH STREETS, IN THE BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

The surety required shall be Two Thousand Dollars ($2,000).

The time for the completion of the work and the full performance of the contract is within thirty (30) days from the date of the executing of the contract.

The bids will be compared and the contract awarded at a lump or aggregate sum to the lowest bidder.

Blank forms may be obtained and the plans and drawings may be seen at the office of the Auditor and Contract Clerk, No. 419 East Twenty-sixth street, Borough of Manhattan, where the bids and deposits are also delivered.

JOHN W. BRANNAN,
President, Board of Trustees,
Bellevue and Allied Hospitals.

Dated December 13, 1906.

d15,28

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

BELLEVUE AND ALLIED HOSPITALS DEPARTMENT OF NEW YORK CITY, TWENTY-SIXTH STREET AND FIRST AVENUE, BOROUGH OF MANHATTAN, THE CITY OF NEW YORK.

SEALED BIDS OR ESTIMATES WILL BE received by the President of the Board of Trustees at the above office until 3 p. m., on

FRIDAY, DECEMBER 28, 1906.

No. 1. FOR FURNITURE, BEDDING, ETC., NEW FORDHAM HOSPITAL.

No. 2. FOR FURNITURE, BEDDING, ETC., FOR NEW HARLEM HOSPITAL.

No. 3. FOR FURNITURE, BEDDING, ETC., FOR NEW WING OF GOUVERNEUR HOSPITAL.

The surety required will be fifty per cent. (50%) of the amount of the bid.

The time for the delivery of the supplies and the full performance of the contract is on or before December 31, 1907.

The bids will be read from the total, and will be compared and awarded to the lowest bidder for the line or class, as specified, as soon thereafter as practicable, according to law.

Blank forms may be obtained at the office of the Auditor and Contract Clerk, No. 419 East Twenty-sixth street, Borough of Manhattan, where the bids and deposits are also delivered.

JOHN W. BRANNAN,
President, Board of Trustees, Bellevue and Allied Hospitals.

Dated December 10, 1906.

d14,28

☞ See General Instructions to Bidders on the last page, last column, of the "City Record."

SUPREME COURT—FIRST DEPARTMENT.

FIRST JUDICIAL DISTRICT.

In the matter of the application of The City of New York, acting by and through the Commissioner of Docks, relative to acquiring right and title to and possession of the wharfage rights, terms, easements, emoluments and privileges appurtenant to PIERS (OLD) NO. 32, OR JAMES SLIP PIER, AND (OLD) NO. 33, OR OLIVER STREET PIER, East river, in the Borough of Manhattan, City of New York, not now owned by The City of New York, and all right, title and interest in and to said piers or any portion thereof, not now owned by The City of New York, and all wharfage rights, terms, easements, emoluments and privileges appurtenant to all that certain bulkhead, dock or wharf property on the southerly side of South street, in said Borough and City, between the easterly side of Pier (old) No. 32, or James Slip Pier, and the westerly side of Pier (old) No. 33, or Oliver Street Pier, not now owned by The City of New York, for the improvement of the water front of The City of New York, on the East river, pursuant to the plan heretofore adopted by the Board of Docks and approved by the Commissioners of the Sinking Fund.

NOTICE IS HEREBY GIVEN THAT BY an order of the Supreme Court of the State of New York, bearing date the 18th day of December, 1906, and filed and entered in the office of the Clerk of the County of New York on the 19th day of December, 1906, Thomas C. Dunham, George C. Clarke and Ferral C. Dininny were appointed Commissioners of Estimate in the above-entitled proceeding.

Notice is further given, pursuant to the statutes in such case made and provided, that the said Thomas C. Dunham, George C. Clarke and Ferral C. Dininny will attend at a Special Term, Part II., of the Supreme Court, to be held at the County Court House, in the Borough of Manhattan, in The City of New York, on the 8th day of January, 1907, at 11 o'clock in the forenoon of that day, for the purpose of being examined under oath by the Corporation Counsel of The City of New York, or by any person having an interest in the said proceeding, as to their qualifications to act as such Commissioners of Estimate in said proceeding.

Dated New York, December 24, 1906.

WILLIAM B. ELLISON,
Corporation Counsel,
Hall of Records,
Borough of Manhattan,
New York City.

d27,j8

FIRST DEPARTMENT.

In the matter of the application of The City of New York relative to acquiring title, wherever the same has not been heretofore acquired, to the lands, tenements and hereditaments required for the opening and extending of WEST ONE HUNDRED AND EIGHTY-SIXTH STREET (although not yet named by proper authority), from Amsterdam avenue to the new street west of High Bridge Park, in the Twelfth Ward, Borough of Manhattan, City of New York.

NOTICE IS HEREBY GIVEN THAT the bill of costs, charges and expenses incurred by reason of the proceedings in the above-entitled matter, will be presented for taxation to one of the Justices of the Supreme Court of the State of New York, First Department, at a Special Term thereof, Part I., to be held at the County Court House, in the Borough of Manhattan, in The City of New York, on the 9th day of January, 1907, at 10.30 o'clock in forenoon of that day, or as soon thereafter as counsel can be heard thereon; and that the said bill of costs, charges and expenses has been deposited in the office of the Clerk of the County of New York, there to remain for and during the space of ten days, as required by the provisions of the Greater New York Charter, as amended by chapter 466 of the Laws of 1901.

Dated Borough of Manhattan, New York, December 26, 1906.

ALEX. LAMONT,
CHAS. P. DILLON,
W. B. DONIHEE,
Commissioners.

JOHN P. DUNN,
Clerk.

d26,j7

FIRST DEPARTMENT.

In the matter of the application of The City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to the lands, tenements and hereditaments required for the opening and extending of FORD STREET (although not yet named by proper authority), from Tiebout avenue to Webster avenue, as laid out on section 14 of the Final Maps of the Twenty-third and Twenty-fourth Wards, in the Twenty-fourth Ward, Borough of The Bronx, City of New York.

NOTICE IS HEREBY GIVEN THAT THE bill of costs, charges and expenses incurred by reason of the proceedings in the above-entitled matter, will be presented for taxation to one of the Justices of the Supreme Court of the State of New York, First Department, at a Special Term thereof, Part I., to be held at the County Court House in the Borough of Manhattan in the City of New York, on the 9th day of January, 1907, at 10.30 o'clock in forenoon of that day, or as soon thereafter as Counsel can be heard thereon; and that the said bill of costs, charges and expenses has been deposited in the office of the Clerk of the County of New York, there to remain for and during the space of ten days, as required by the provisions of the Greater New York Charter, as amended by chapter 466 of the Laws of 1901.

Dated Borough of Manhattan, New York, December 26, 1906.

FRANCIS W. POLLOCK,
STANISLAUS J. VANECEK,
GERALD J. BARRY,
Commissioners.

JOHN P. DUNN,
Clerk.

d26,j7

NEW YORK SUPREME COURT.

FIRST DEPARTMENT.

In the matter of the application of the Mayor, Aldermen and Commonalty of The City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to the lands, tenements and hereditaments required for the opening of TOWNSEND AVENUE (although not yet named by proper authority), from East One Hundred and Seventieth street to East One Hundred and Seventy-sixth street, as the same has been heretofore laid out and designated as a first-class street or road, in the Twenty-fourth Ward of The City of New York.

WE, THE UNDERSIGNED COMMISsioners of Estimate and Assessment in the above-entitled matter, hereby give notice to all persons interested in this proceeding, and to the owner or owners, occupant or occupants of all houses and lots and improved and unimproved lands affected thereby, and to all others whom it may concern, to wit:

First—That we have completed our supplemental and amended estimate of assessment for benefit, and that all persons interested in this proceeding, or in any of the lands, tenements and hereditaments and premises affected thereby, and having objections thereto, do present their said objections in writing, duly verified, to us at our office, Nos. 90 and 92 West Broadway, in the Borough of Manhattan, in The City of New York, on or before the 14th day of January, 1907, and that we, the said Commissioners, will hear parties so objecting, and for that purpose will be in attendance at our said office on the 17th day of January, 1907, at 2 o'clock p. m.

Second—That the abstract of our said supplemental and amended estimate of assessment for benefit, together with our damage and benefit maps, and also all the affidavits, estimates, proofs and other documents used by us in making the same, have been deposited in the Bureau of Street Openings in the Law Department of The City of New York, Nos. 90 and 92 West Broadway, in the Borough of Manhattan, in said City, there to remain until the 16th day of January, 1907.

Third—That the limits of our assessment for benefit include all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of The Bronx, in The City of New York, which, taken together, are bounded and described as follows, viz.:

On the north by the southerly side of Mount Hope place, from the easterly side of Jerome avenue to the westerly side of Walton avenue; on the south by the northerly side of Elliot place, from the easterly side of Jerome avenue to the westerly side of Walton avenue; on the east by the westerly side of Walton avenue, from the northerly side of Elliot place to the southerly side of Mount Hope place, and on the west by the easterly side of Jerome avenue, from the northerly side of Elliot place to the southerly side of Mount Hope place; excepting from said area all streets, avenues and roads or portions thereof heretofore legally opened, as such streets are shown upon our benefit map deposited as aforesaid.

Fourth—That provided there be no objections filed to said supplemental and amended abstract, our final report herein will be presented for confirmation to the Supreme Court of the State of New York, First Department, at a Special Term thereof, Part III., to be held in the County Court House in the Borough of Manhattan, in The City of New York, on the 7th day of March, 1907, at the opening of the Court on that day.

Fifth—In case, however, objections are filed to said supplemental and amended abstract of estimate of assessment for benefit, the notice of motion to confirm our final report herein will stand adjourned to the date to be hereafter specified, and of which notice will be given to all those who have theretofore appeared in this proceeding, as well as by publication in the CITY RECORD, pursuant to sections 981 and 984 of the Greater New York Charter, as amended by chapter 658 of the Laws of 1906.

Dated Borough of Manhattan, New York, December 18, 1906.

FRANK E. HIPPLE,
Chairman;
JAMES HIGGINS,
CHARLES LUTZ,
Commissioners.

JOHN P. DUNN,
Clerk.

d24,j14

FIRST DEPARTMENT.

In the matter of the application of the Mayor, Aldermen and Commonalty of The City of New York relative to acquiring title, wherever the same has not been heretofore acquired, to the lands, tenements and hereditaments required for the opening of GRANT AVENUE (although not yet named by proper authority), from East One Hundred and Sixty-first street to East One Hundred and Seventieth street, as the same has been heretofore laid out and designated as a first-class street or road, in the Twenty-third Ward, Borough of The Bronx, City of New York.

NOTICE IS HEREBY GIVEN THAT the supplemental and amended final report of the Commissioners of Estimate and Assessment in the above-entitled matter will be presented for confirmation to the Supreme Court of the State of New York, First Department, at a Special Term thereof, Part III., to be held in the County Court House, in the Borough of Manhattan, in The City of New York, on the 8th day of January, 1907, at 10.30 o'clock in forenoon of that day; and that the said supplemental and amended final report has been deposited in the office of the Clerk of the County of New York, there to remain for and during the space of five days, as required by law.

Dated Borough of Manhattan, New York, December 22, 1906.

RICHARD LAWRENCE,
R. E. SIMON,
Commissioners.

JOHN P. DUNN,
Clerk.

d22,28

FIRST DEPARTMENT.

In the matter of the application of The City of New York relative to acquiring title, wherever the same has not been heretofore acquired, to the lands, tenements and hereditaments required for the opening of EAST ONE HUNDRED AND NINETY-SEVENTH STREET (although not yet named by proper authority), from Bainbridge avenue to Creston avenue, in the Twenty-fourth Ward, Borough of The Bronx, City of New York.

NOTICE IS HEREBY GIVEN THAT THE bill of costs, charges and expenses incurred by reason of the proceedings in the above-entitled matter will be presented for taxation to one of the Justices of the Supreme Court of the State of New York, First Department, at a Special Term thereof, Part I., to be held at the County Court House, in the Borough of Manhattan, in The City of New York, on the 7th day of January, 1907, at 10.30 o'clock in forenoon of that day, or as soon thereafter as counsel can be heard thereon; and that the said bill of costs, charges and expenses has been deposited in the office of the Clerk of the County of New York, there to remain for and during the space of ten days, as required by the provisions of the Greater New York Charter, as amended by chapter 466 of the Laws of 1901.

Dated Borough of Manhattan, New York, December 22, 1906.

N. J. O'CONNELL,
ALBERT ELTERICH,
GEO. P. BAISLEY,
Commissioners.

JOHN P. DUNN,
Clerk.

d22,j3

FIRST DEPARTMENT.

In the matter of acquiring title by The City of New York to certain lands and premises situated on the NORTHERLY SIDE OF ONE HUNDRED AND THIRTY-EIGHTH STREET, between Fifth and Lenox avenues, in the Borough of Manhattan, duly selected as a site for school purposes, according to law.

WE, THE UNDERSIGNED COMMISsioners of Estimate and Appraisal in the above-entitled proceeding, do hereby give notice to the owner or owners, lessee or lessees, parties or persons respectively entitled to or interested in the lands, tenements, hereditaments and premises, title to which is sought to be acquired in this proceeding, and to all others whom it may concern, to wit:

First—That we have completed our estimate of the loss and damage to the respective owners, lessees, parties or persons respectively entitled to or interested in the lands and premises affected by this proceeding, or having any interest therein, and have filed a true report or transcript of such estimate in the office of the Board of Education, at the southwest corner of Fifty-ninth street and Park avenue, in the Borough of Manhattan, City of New York, for the inspection of whomsoever it may concern.

Second—That all parties or persons whose rights may be affected by the said estimate, or who may object to the same, or any part thereof, may, within ten days after the first publication of this notice, December 20, 1906, file their objections, in writing, with us, at our office, Room 401, No. 258 Broadway, in the Borough of Manhattan, The City of New York; and we, the said Commissioners, will hear parties so objecting, at our said office, on the 3d day of January, 1907, at 11 o'clock in the forenoon of that day, and upon such subsequent days as may be found necessary.

Dated New York, December 19, 1906.

SOLOMON HYMAN,
WILLIAM J. ELLIS,
WILLIAM F. DALTON,
Commissioners.

JOSEPH M. SCHENCK,
Clerk.

d20,j2

FIRST DEPARTMENT.

In the matter of the application of the Mayor, Aldermen and Commonalty of The City of New York relative to acquiring title, wherever the same has not been heretofore acquired, to the lands, tenements and hereditaments required for the purpose of opening of CLAY AVENUE (formerly Anthony avenue) (although not yet named by proper authority), from Webster avenue to East One Hundred and Seventy-sixth street, as the same been heretofore laid out and designated as a first-class street or road, in the Twenty-fourth Ward of The City of New York.

NOTICE IS HEREBY GIVEN THAT THE supplemental and additional bill of costs, charges and expenses incurred by reason of the proceedings in the above-entitled matter will be presented for taxation to one of the Justices of the Supreme Court of the State of New York, First Department, at a Special Term thereof, Part I., to be held at the County Court House, in the Borough of Manhattan, in The City of New York, on the 28th day of December, 1906, at 10.30 o'clock in forenoon of that day, or as soon thereafter as counsel can be heard thereon; and that the said bill of costs, charges and expenses has been deposited in the office of the Clerk of the County of New York, there to remain for and during the space of ten days, as required by the provisions of the Greater New York Charter, as amended by chapter 466 of the Laws of 1901.

Dated Borough of Manhattan, New York, December 15, 1906.

JOHN DE WITT WARNER,
JOHN T. SIMON,
Commissioners.

JOHN P. DUNN,
Clerk.

d15,27

FIRST DEPARTMENT.

In the matter of acquiring title by The City of New York to certain lands and premises situated on the WESTERLY LINE OF HAMILTON PLACE, between One Hundred and Fortieth and One Hundred and Forty-first streets, in the Borough of Manhattan, duly selected as a site for school purposes, according to law.

NOTICE IS HEREBY GIVEN THAT IT is the intention of the Corporation Counsel to make application to the Supreme Court, at Special Term, Part III., to be held at the County Court House, in the Borough of Manhattan, on the 28th day of December, 1906, at the call of the calendar on that day, or as soon thereafter as counsel can be heard, for the appointment of three discreet and disinterested persons, being citizens of the United States and residents of the Borough of Manhattan, as Commissioners of Estimate and Appraisal, to ascertain and appraise the compensation to be made to the owners and all persons interested in certain property situated in the Borough of Manhattan, bounded and described as follows:

"Beginning at a point formed by the intersection of the northerly line of West One Hundred and Fortieth street with the westerly line of Hamilton place, and running thence northerly along the westerly line of Hamilton place 217 feet 1 inch to the southerly line of West One Hundred and Forty-first street; thence westerly along the southerly line of West One Hundred and Forty-first street 219 feet 3¼ inches; thence southerly at right angles to West One Hundred and Forty-first street 199 feet 10 inches to the northerly line of West One Hundred and Fortieth street; thence easterly along the northerly line of West One Hundred and Fortieth street 134 feet 6 inches to the westerly line of Hamilton place, the point or place of beginning."

WILLIAM B. ELLISON,
Corporation Counsel,
Hall of Records,
Manhattan.

Dated New York December 12, 1906.

d15,27

SUPREME COURT—SECOND DEPARTMENT.

SECOND DEPARTMENT.

In the matter of the application of The City of New York relative to acquiring title, wherever the same has not been heretofore acquired, to the lands and premises required for the opening and extending of LOCKWOOD STREET (although not yet named by proper authority), from Payntar avenue to Grand avenue, in the First Ward, Borough of Queens, in The City of New York.

WE, THE UNDERSIGNED COMMISsioners of Estimate and Assessment in the above-entitled matter, hereby give notice to all persons interested in this proceeding, and to the owner or owners, occupant or occupants of all houses and lots and improved and unimproved lands affected thereby, and to all others whom it may concern, to wit:

First—That we have completed our supplemental and amended estimate of assessment for benefit, and that all persons interested in this proceeding, or in any of the lands, tenements and hereditaments and premises affected thereby, and having objections thereto, do present their said objections, in writing, duly verified, to us at our office, No. 252 Jackson avenue, in the Borough of Queens, in The City of New York, on or before the 16th day of January, 1907, and that we, the said Commissioners, will hear parties so objecting, and for that purpose will be in attendance at our said office on the 18th day of January, 1907, at 4 o'clock p. m.

Second—That the abstract of our said supplemental and amended estimate of assessment, together with our benefit maps, and also all the affidavits, estimates, proofs and other documents used by us in making the same, have been deposited in the Bureau of Street Openings in the Law Department of The City of New York, No. 252 Jackson avenue, in the Borough of Queens, in said City, there to remain until the 18th day of January, 1907.

Third—That the limits of our assessment for benefit include all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of Queens, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at a point formed by the intersection of the southwesterly prolongation of a line parallel to and 100 feet southeasterly from the southeasterly line of Lockwood street with a line parallel to and 200 feet southwesterly from the southwesterly line of Payntar avenue; running thence northwesterly along said last-mentioned parallel line to its intersection with the southwesterly prolongation of a line parallel to and 100 feet northwesterly from the northwesterly line of Lockwood street; thence northeasterly along said last-mentioned prolongation and parallel line and its prolongation to its intersection with a line parallel to and 200 feet northeasterly from the northeasterly line of Grand avenue; thence southeasterly along said last-mentioned parallel line to its intersection with the northeasterly prolongation of a line parallel to and 100 feet southeasterly from the southeasterly line of Lockwood street; thence southwesterly along said last-mentioned prolongation and parallel line and its prolongation to the point or place of beginning; excepting from said area all streets, avenues and roads, or portions thereof, heretofore legally opened as such area is shown upon our benefit maps deposited as aforesaid.

Fourth—That, provided there be no objections filed to said abstract, our final report herein will be presented for confirmation to the Supreme Court of the State of New York, Second Department, at a Special Term thereof for the hearing of motions, to be held in the County Court House, in the Borough of Brooklyn, in The City of New York, on the 26th day of February, 1907, at the opening of the Court on that day.

Fifth—In case, however, objections are filed to said abstract of estimate of assessment, the notice of motion to confirm our final report herein will stand adjourned to the date to be hereafter specified, and of which notice will be given to all those who have theretofore appeared in this proceeding, as well as by publication in the CITY RECORD, pursuant to sections 981 and 984 of the Greater New York Charter, as amended by chapter 658 of the Laws of 1906.

Dated Borough of Manhattan, New York, November 30, 1906.

WILLIAM GIBSON,
Chairman;
LUKE A. KEENAN,
Commissioners.

JOHN P. DUNN,
Clerk.

d26,j14

SECOND DEPARTMENT.

In the matter of the application of The City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to the lands and premises required for the opening and extending of POMEROY STREET (Eighth avenue), (although not yet named by proper authority), from Jackson avenue to Riker avenue, in the First Ward, Borough of Queens, in The City of New York.

WE, THE UNDERSIGNED COMMISsioners of Estimate and Assessment in the above-entitled matter, hereby give notice to all persons interested in this proceeding, and to the owner or owners, occupant or occupants of all houses and lots and improved and unimproved lands affected thereby, and to all others whom it may concern, to wit:

First—That we have completed our supplemental and amended estimate and assessment, and that all persons interested in this proceeding, or in any of the lands, tenements and hereditaments and premises affected thereby, and having objections thereto, do present their said objections in writing, duly verified, to us at our office, No. 252 Jackson avenue, in the Borough of Queens, in The City of New York, on or before the 16th day of January, 1907, and that we, the said Commissioners, will hear parties so objecting, and for that purpose will be in attendance at our said office on the 18th day of January, 1907, at 2 o'clock p. m.

Second—That the abstracts of our said estimate and assessment, together with our damage and benefit maps, and also all the affidavits, estimates, proofs and other documents used by us in making the same, have been deposited in the Bureau of Street Openings in the Law Department of The City of New York, No. 252 Jackson avenue, in the Borough of Queens, in said City, there to remain until the 18th day of January, 1907.

Third—That the limits of our assessment for benefit include all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of Queens in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at the point of intersection of the middle line of the blocks between Webster avenue and Washington avenue with the middle line of the blocks between Seventh avenue (Blackwell street) and Eighth avenue (Pomeroy street); running thence northerly along the last-mentioned middle line of the blocks to the northerly line of Riker avenue; thence westerly along the northerly line of Riker avenue to its intersection with a line parallel to and 60 feet westerly from the westerly line of Seventh avenue (Blackwell street); thence northerly along said parallel line to the United States pierhead and bulkhead line; thence in a northerly and easterly direction following the said pierhead and bulkhead line to its intersection with the middle line of the block between Ninth avenue (Kouwenhoven street) and Tenth avenue (Steinway avenue); thence southerly along said middle line of the block to the northerly line of Riker avenue; thence westerly along the northerly line of Riker avenue to its intersection with the middle line of the blocks between Eighth avenue (Pomeroy street) and Ninth avenue (Kouwenhoven street); thence southerly along said middle line of the blocks to the southerly line of Washington avenue; thence easterly along the southerly line of Washington avenue to the westerly line of Ninth avenue (Kouwenhoven street); thence on a straight line to the point of intersection of the southerly line of Jackson avenue with the westerly line of Harold avenue; thence southerly along the westerly line of Harold avenue to the northerly right of way of the Long Island Railroad; thence westerly along said northerly right of way to the easterly line of Moore street; thence northerly along the easterly line of Moore street to the southerly line of Jackson avenue; thence on a straight line to the point of intersection of the northerly line of Freeman avenue and a line parallel to and 60 feet westerly from the westerly line of Sixth avenue (Bartow street); thence northerly along said parallel line to its intersection with the middle line of the blocks between Webster avenue and Washington avenue; thence easterly along said middle line of the blocks to the point or place of beginning; excepting from said area all streets, avenues and roads, or portions thereof, heretofore legally opened, as such area is shown upon our benefit maps deposited as aforesaid.

Fourth—That, provided there be no objections filed to either of said abstracts, our final report herein will be presented for confirmation to the Supreme Court of the State of New York, Second Department, at a Special Term thereof for the hearing of motions, to be held in the County Court House, in the Borough of Brooklyn, in The City of New York, on the 26th day of February, 1907, at the opening of the Court on that day.

Fifth—In case, however, objections are filed to either of said abstracts of estimate and assessment, the notice of motion to confirm our final report herein will stand adjourned to the date to be hereafter specified, and of which notice will be given to all those who have theretofore appeared in this proceeding, as well as by publication in the CITY RECORD, pursuant to sections 981 and 984 of the Greater New York Charter, as amended by chapter 658 of the Laws of 1906.

Dated Borough of Manhattan, New York, December 19, 1906.

EUGENE V. DALY,
Chairman;
JOSEPH J. MAHONEY,
Commissioners.

JOHN P. DUNN,
Clerk.

d26,i14

SECOND DEPARTMENT.

In the matter of the application of The City of New York, relative to acquiring title to the lands, tenements and hereditaments required for the purpose of opening AVENUE D, from Flatbush avenue to Rogers avenue, in the Twenty-ninth Ward, in the Borough of Brooklyn, of The City of New York, as the same has been heretofore laid out.

WE, THE UNDERSIGNED, COMMISsioners of Estimate and Assessment in the above entitled matter, hereby give notice to all persons interested in this proceeding and to the owner or owners, occupant or occupants of all houses and lots and improved and unimproved lands, affected thereby, and to all others whom it may concern, to wit:

First—That we have completed our estimate and assessment, and that all persons interested in this proceeding, or in any of the lands, tenements and hereditaments and premises affected thereby, and having objection thereto, do present their said objections in writing, duly verified, to us at our office in the office of the Law Department, No. 166 Montague street, in the Borough of Brooklyn, in The City of New York, on or before the 12th day of January, 1907, and that we, the said Commissioners, will hear parties so objecting, and for that purpose will be in attendance at our said office on the 15th day of January, 1907, at 2 o'clock p. m.

Second—That the abstract of our said estimate and assessment, together with our damage and benefit maps, and also all the affidavits, estimates, proofs and other documents used by us in making our report, have been deposited in the Bureau of Street Openings of the Law Department of The City of New York, in the Borough of Brooklyn, No. 166 Montague street, in the Borough of Brooklyn, in The City of New York, there to remain until the 24th day of January, 1907.

Third—That the limits of our assessment for benefit include all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of Brooklyn, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning on the westerly side of Rogers avenue at a point distant 135 feet northerly of the northerly side of Avenue D; running thence westerly, parallel with Avenue D to the easterly side of Flatbush avenue; running thence southeasterly and along the easterly side of Flatbush avenue to a point where a line if drawn parallel with Avenue D and distant 135 feet southerly therefrom would intersect the same; running thence easterly and parallel with Avenue D to the westerly side of Rogers avenue; running thence northerly along the westerly side of Rogers avenue to the point or place of beginning.

Fourth—That our report herein will be presented for confirmation to the Supreme Court of the State of New York, Second Department, at a Special Term thereof for the hearing of motions, to be held in the County Court House in the Borough of Brooklyn, in The City of New York, on the 25th day of March, 1907, at the opening of the Court on that day.

Dated, Borough of Brooklyn, The City of New York, December 24, 1906.

JOHN R. FARRAR,
Chairman;
JOSEPH A. GUIDER,
ARTHUR BECKWITH,
Commissioners.

JAMES F. QUIGLEY,
Clerk.

d24,j11

SECOND DEPARTMENT.

In the matter of the application of The City of New York relative to acquiring title to the lands, tenements and hereditaments required for the purpose of opening EIGHTY-FIFTH STREET, from Narrows avenue to Fifth avenue, from Fort Hamilton avenue to Tenth avenue, from Twelfth avenue to Waters avenue, and from Fifteenth avenue to Sixteenth avenue, in the Thirtieth Ward, in the Borough of Brooklyn of The City of New York, as the same has been heretofore laid out.

WE, THE UNDERSIGNED COMMISsioners of Estimate and Assessment in the above-entitled matter, hereby give notice to all persons interested in this proceeding, and to the owner or owners, occupant or occupants of all houses and lots and improved and unimproved lands affected thereby, and to all others whom it may concern, to wit:

First—That we have completed our amended and supplemental estimate and assessment, and that all persons interested in this proceeding, or in any of the lands, tenements and hereditaments and premises affected thereby, and having objection thereto, do present their said objections, in writing, duly verified, to us at our office in the office of the Law Department, No. 166 Montague street, in the Borough of Brooklyn, in The City of New York, on or before the 12th day of January, 1907, and that we, the said Commissioners, will hear parties so objecting, and for that purpose will be in attendance at our said office on the 14th day of January, 1907, at 4 o'clock p. m.

Second—That the abstract of our said amended and supplemental estimate and assessment, together with our damage and benefit maps, and also all the affidavits, estimates, proofs and other documents used by us in making our report, have been deposited in the Bureau of Street Openings of the Law Department of The City of New York, in the Borough of Brooklyn, No. 166 Montague street, in the Borough of Brooklyn, in The City of New York, there to remain until the 24th day of January, 1907.

Third—That the limits of our assessment for benefit include all those lands, tenements and hereditaments and premises situate, lying and being in the Borough of Brooklyn, in The City of New York, which, taken together, are bounded and described as follows, viz.:

Beginning at a point on the easterly side of Narrows avenue and distant 100 feet northerly from the northerly side of Eighty-fifth street; running thence easterly and parallel with Eighty-fifth street to the westerly side of Fourth avenue; running thence southeasterly and across Fourth avenue to the centre line of the block between Eighty-fifth street and Eighty-fourth street; running thence southeasterly and parallel with Eighty-fifth street to the westerly side of Fifth avenue; running thence southerly along the westerly side of Fifth avenue to the centre line of the block between Eighty-fifth street and Eighty-sixth street; running thence northwesterly parallel with Eighty-fifth street to the easterly side of Narrows avenue; running thence northerly and along the easterly side of Narrows avenue to the point or place of beginning; also

Beginning at a point on the southeasterly side of Fort Hamilton avenue where the same intersects the centre line of the block between Eighty-fifth street and Eighty-fourth street; running thence southeasterly and along the centre line of the block between Eighty-fifth street and Eighty-fourth street to the westerly side of Tenth avenue; running thence southerly and along the westerly side of Tenth avenue to the centre line of the block between Eighty-fifth street and Eighty-sixth street; running thence northwesterly and along the centre line of the block between Eighty-fifth street and Eighty-sixth street to the southeasterly side of Fort Hamilton avenue; running thence northeasterly along the southeasterly side of Fort Hamilton avenue to the point or place of beginning; also

Beginning at a point on the southerly side of Twelfth avenue, where the same intersects the centre line of the block between Eighty-fifth street and Eighty-fourth street; running thence southerly and along the centre line of the block between Eighty-fifth street and Eighty-fourth street to the southerly side of Waters avenue; running thence westerly and along the southerly side of Waters avenue to the centre line of the block between Eighty-fifth street and Eighty-sixth street; running thence northerly and along the centre line of the block between Eighty-fifth street and Eighty-sixth street to the southerly side of Twelfth avenue; running thence easterly and along the southerly side of Twelfth avenue to the point or place of beginning; also

Beginning at a point on the southerly side of Fifteenth avenue, where the same is intersected by the centre line of the block between Eighty-fifth street and Eighty-fourth street; running thence southerly and parallel with Eighty-fifth street to the northerly side of Sixteenth avenue; running thence westerly and along the northerly side of Sixteenth avenue to the centre line of the block between Eighty-fifth street and Eighty-sixth street; running thence northerly and along the centre line of the block between Eighty-fifth street and Eighty-sixth street to the southerly side of Fifteenth avenue; running thence easterly along the southerly side of Fifteenth avenue to the point or place of beginning.

Fourth—That our report herein will be presented for confirmation to the Supreme Court of the State of New York, Second Department, at a Special Term thereof for the hearing of motions, to be held in the County Court House in the Borough of Brooklyn in The City of New York, on the 25th day of March, 1907, at the opening of the Court on that day.

Dated Borough of Brooklyn, The City of New York, December 24, 1906.

EDWARD C. DOWLING,
Chairman;
JAMES E. ADAMS,
Commissioners.

JAMES F. QUIGLEY,
Clerk.

d24,j11

SECOND DEPARTMENT.

In the matter of the application of The City of New York relative to acquiring title to the lands, tenements and hereditaments required for the purpose of closing WEST EIGHTH STREET, from Surf avenue to high-water line, in the Thirty-first Ward, in the Borough of Brooklyn, in The City of New York.

NOTICE IS HEREBY GIVEN THAT AN application will be made to the Supreme Court of the State of New York at a Special Term of said Court for the hearing of motions, to be held in and for the County of Kings, in the County Court House, in the Borough of Brooklyn, in The City of New York, on the 7th day of January, 1907, at the opening of Court on that day, or as soon thereafter as counsel can be heard, for the appointment of Commissioners of Estimate and Assessment in the above-entitled proceeding.

The nature and the extent of the improvement hereby intended is the closing and discontinuing by The City of New York for the use of the public of all the lands of West Eighth street, between Surf avenue and high-water line, in the Thirty-first Ward, in the Borough of Brooklyn, in The City of New York.

The lands required for the purpose of closing West Eighth street, between Surf avenue and high-water line, as aforesaid, are shown on a map entitled "Map or plan showing the closing of West Eighth street, from Surf avenue to high-water line, in the Thirty-first Ward, Borough of Brooklyn, City of New York," and dated April 14, 1904, which map was filed in the office of the Corporation Counsel of The City of New York, in the Borough of Brooklyn, on the 16th day of April, 1904.

Dated Borough of Brooklyn, City of New York, the 20th day of December, 1906.

WILLIAM B. ELLISON,
Corporation Counsel,
No. 166 Montague Street,
Brooklyn, N. Y.

d20,j2

NEW YORK SUPREME COURT.

NINTH JUDICIAL DISTRICT.

CATSKILL AQUEDUCT.

Notice of Application for the Appointment of Commissioners of Appraisal—Putnam County.

PUBLIC NOTICE IS HEREBY GIVEN that it is the intention of the Corporation Counsel of The City of New York to make application to the Supreme Court of the State of New York for the appointment of Commissioners of Appraisal under chapter 724 of the Laws of 1905 as amended. Such application will be made at a Special Term of the Supreme Court to be held in and for the Ninth Judicial District at the Court House in the Village of White Plains, Westchester County, N. Y., on Saturday, the 19th day of January, 1907, at 10 o'clock in the forenoon of that day, or as soon thereafter as counsel can be heard. The object of such application is to obtain an order of the Court appointing three disinterested and competent freeholders, one of whom shall reside in the County of New York and at least one of whom shall reside in the county where the real estate hereinafter described is situated, to act as Commissioners of Appraisal under said act, and discharge all the duties conferred by the said law and the acts amendatory thereof, upon such Commissioners of Appraisal, for the purpose of providing an additional supply of pure and wholesome water for The City of New York.

The real estate sought to be taken or affected is situated in the Town of Phillipstown, in the County of Putnam and State of New York.

The following is a brief description of the real estate sought to be taken, a reference to the date and place of filing of the map, and of the route of the aqueduct and of the greatest and least width of its tract.

All those certain pieces or parcels of real estate situated in the Town of Phillipstown, Putnam County and State of New York, shown on a certain map entitled "Northern Aqueduct Department, Section 2, Board of Water Supply of The City of New York. Map of Real Estate situated in the Town of Phillipstown, County of Putnam and State of New York, to be acquired by The City of New York under the provisions of chapter 724 of the Laws of 1905, as amended, for the construction of Catskill Aqueduct and appurtenances, from Westchester County line to Foundry Brook Valley," which map was filed in the office of the County Clerk of the County of Putnam at Carmel, New York, on the 17th day of October, 1906, and is bounded and described as follows:

Beginning at a point on the line between the counties of Westchester and Putnam, in the Town of Phillipstown, where the said county line is intersected by the west property line of Frank Hyde, and running thence along the said property line the following courses and distances:

N. 2 degrees 43 minutes E. 207.84 feet, N. 3 degrees 41 minutes 30 seconds E. 133.58 feet to the west property line of James Gale; thence along the same N. 3 degrees 51 minutes E. 147.81 feet, N. 2 degrees 7 minutes E. 398.32 feet, N. 5 degrees 57 minutes 30 seconds E. 151.25 feet, S. 64 degrees 28 minutes W. 247.07 feet, S. 65 degrees 35 minutes W. 169.06 feet, S. 27 degrees 59 minutes W. 105.32 feet, S. 44 degrees 10 minutes W. 332.73 feet, S. 59 degrees 10 minutes W. 193.76 feet, S. 85 degrees 21 minutes W. 201.86 feet, S. 85 degrees 50 minutes W. 229.44 feet, S. 85 degrees 47 minutes W. 114.88 feet, N. 74 degrees 19 minutes W. 226.36 feet, S. 89 degrees 4 minutes W. 168.24 feet, N. 70 degrees 22 minutes W. 293.03 feet; thence on a curve of 37.5 feet radius to the left 46.55 feet; thence S. 38 degrees 31 minutes W. 132.36 feet, S. 72 degrees 19 minutes W. 280 feet, S. 79 degrees 41 minutes W. 229.01 feet, S. 78 degrees 50 minutes W. 157.3 feet, N. 52 degrees 57 minutes W. 148.86 feet; thence on a curve of 37.5 feet radius to the left 50.54 feet; thence S. 49 degrees 50 minutes W. 22.98 feet; thence on a curve of 62.5 feet radius to the right 100.74 feet; thence N. 37 degrees 49 minutes W. 23.25 feet to the centre of the Albany Post road; thence along the same N. 2 degrees 38 minutes E. 38.54 feet; thence S. 37 degrees 49 minutes E. 52.57 feet; thence on a curve of 37.5 feet radius to the left 60.44 feet; thence N. 49 degrees 50 minutes E. 22.98 feet; thence on a curve of 62.5 feet radius to the right 84.23 feet; thence S. 52 degrees 57 minutes E. 137.68 feet; thence N. 78 degrees 50 minutes E. 146.3 feet, N. 79 degrees 41 minutes E. 227.59 feet, N. 72 degrees 19 minutes E. 270.8 feet, N. 38 degrees 31 minutes E. 124.76 feet; thence on a curve of 62.5 feet radius to the right 77.58 feet; thence S. 70 degrees 22 minutes E. 288.49 feet, N. 89 degrees 4 minutes E. 167.36 feet, S. 74 degrees 19 minutes E. 225.64 feet, N. 85 degrees 47 minutes E. 110.52 feet, N. 85 degrees 50 minutes E. 229.36 feet, N. 85 degrees 21 minutes E. 195.94 feet, N. 59 degrees 10 minutes E. 184.64 feet, N. 44 degrees 10 minutes E. 325.87 feet, N. 27 degrees 59 minutes E. 110.28 feet, N. 65 degrees 35 minutes E. 177.34 feet, N. 64 degrees 28 minutes E. 262.15 feet to the before-mentioned property line of James Gale; thence along the same N. 5 degrees 57 minutes 30 seconds E. 57.24 feet, N. 2 degrees 42 minutes E. 298.5 feet; thence N. 41 degrees 12 minutes W. 2,066.15 feet to the south property line of Gardner Holman; thence along the same N. 80 degrees 38 minutes W. 275.82 feet; thence N. 41 degrees 12 minutes W. 2,414.9 feet and S. 82 degrees 17 minutes W. 26.21 feet; thence on a curve of 325 feet radius to the right 190.91 feet; thence N. 64 degrees 3 minutes 30 seconds W. 161.37 feet; thence on a curve of 325 feet radius to the right 113.62 feet; thence N. 41 degrees 1 minutes 30 seconds W. 166.05 feet; thence on a curve of 325 feet radius to the right 233.49 feet; thence N. 2 degrees 52 minutes W. 321.54 feet and N. 5 degrees 51 minutes W. 915.66 feet, crossing the Albany Post road; thence N. 50 degrees 51 minutes W. 176.78 feet, N. 5 degrees 51 minutes W. 794.71 feet, S. 71 degrees 15 minutes 30 seconds W. 393.83 feet, N. 18 degrees 44 minutes 30 seconds W. 320 feet, N. 71 degrees 15 minutes 30 seconds E. 675 feet, N. 18 degrees 44 minutes 30 seconds W. 232.06 feet to the south property line of Oscar Stapf; thence along the same S. 66 degrees 53 minutes 30 seconds E. about 100 feet; thence N. 18 degrees 44 minutes 30 seconds W. 4,497.8 feet, S. 71 degrees 15 minutes 30 seconds W. 375 feet, N. 18 degrees 44 minutes 30 seconds W. 454.43 feet; thence N. 14 degrees 37 minutes 30 seconds E. 500 feet, N. 71 degrees 15 minutes 30 seconds E. 100 feet; N. 18 degrees 44 minutes 30 seconds W. 5,487.88 feet to the south property line of Helen Bratt DuBarry, and thence along the same N. 77 degrees 44 minutes 30 seconds W. about 450 feet; thence N. 13 degrees 28 minutes 30 seconds W. 1,058.4 feet, N. 8 degrees 40 minutes W. 219.43 feet, N. 1 degree 30 minutes E. 85.3 feet, N. 71 degrees 15 minutes 30 seconds E. 150.63 feet, and thence on a curve of 300 feet radius to the right 227.77 feet N. 24 degrees 45 minutes E. 282.63 feet, S. 89 degrees 7 minutes W. 290.13 feet, S. 68 degrees 13 minutes W. 172.83 feet, N. 21 degrees 47 minutes W. 22 feet to the centre of the Phillipse Brook road; thence N. 21 degrees 47 minutes W. 38 feet, N. 68 degrees 13 minutes E. 183.9 feet, N. 89 degrees 7 minutes E. 330 feet, N. 24 degrees 45 minutes 30 seconds E. 124 feet; thence on a curve of 100 feet radius to the left 101.06 feet; thence N. 56 degrees 51 minutes 30 seconds E. 15 feet, N. 33 degrees 8 minutes 30 seconds W. 50 feet, S. 56 degrees 51 minutes 30 seconds W. 15 feet, N. 33 degrees 8 minutes 30 seconds W. 99.36 feet, S. 56 degrees 51 minutes 30 seconds W. 150 feet, N. 33 degrees 8 minutes 30 seconds W. 200 feet, N. 25 degrees 56 minutes 30 seconds E. 286.58 feet; thence on a curve of 300 feet radius to the right 135.11 feet; thence N. 18 degrees 28 minutes E. 224.15 feet; thence on a curve of 100 feet radius to the left 54.35 feet; thence N. 12 degrees 40 minutes 30 seconds W. 204.38 feet; thence on a curve of 1,100 feet radius to the right 267.25 feet; thence N. 1 degree 14 minutes 30 seconds E. 1,073.49 feet, S. 48 degrees W. 108.36 feet, N. 47 degrees 59 minutes 30 seconds W. 193.28 feet, N. 20 degrees 31 minutes 30 seconds W. 164.54 feet, N. 33 degrees 53 minutes W. 124.43 feet, N. 83 degrees 13 minutes 30 seconds W. 118.15 feet to the east side of a road leading to Garrison; thence along the same N. 3 degrees 31 minutes 30 seconds E. 25.04 feet; thence S. 83 degrees 13 minutes 30 seconds E. 131.05 feet, S. 33 degrees 53 minutes E. 138.84 feet, S. 20 degrees 31 minutes 30 seconds E. 161.36 feet, S. 47 degrees 59 minutes 30 seconds E. 175.52 feet, N. 48 degrees E. 100.41 feet; thence N. 1 degree 14 minutes 30 seconds E. 687.66 feet; thence on a curve of 300 feet radius to the right 148.63 feet; thence N. 29 degrees 38 minutes E. 83.69 feet; thence on a curve of 900 feet radius to the left 591.86 feet; thence N. 8 degrees 3 minutes W. 831 feet, N. 81 degrees 57 minutes E. 15 feet, N. 8 degrees 3 minutes W. 50 feet, S. 81 degrees 57 minutes W. 15 feet, N. 8 degrees 3 minutes W. 510.03 feet; thence on a curve of 300 feet radius to the right 77.94 feet; thence N. 6 degrees 50 minutes 30 seconds E. 292.62 feet; thence on a curve of 100 feet radius to the left 105.42 feet; thence N. 53 degrees 34 minutes W. 316.83 feet to the centre of Indian brook; thence N. 53 degrees 34 minutes W. 115 feet to the centre of Scott Hill road; thence N. 53 degrees 34 minutes W. 652.06 feet, S. 36 degrees 26 minutes W. 100 feet, N. 53 degrees 34 minutes W. 300 feet, N. 36 degrees 26 minutes E. 100 feet, N. 53 degrees 34 minutes W. 40 feet; thence on a curve of 100 feet radius to the left 39.53 feet, N. 76 degrees 13 minutes W. 205 feet S. 13 degrees 47 minutes W. 25 feet, N. 76 degrees 13 minutes W. 199.69 feet; thence on a curve of 325 feet radius to the right 106.86 feet; thence N. 57 degrees 22 minutes 30 seconds W. 257.65 feet; thence on a curve of 1,125 feet radius to the right 255.24 feet; thence N. 44 degrees 22 minutes 30 seconds W. 168.98 feet; thence on a curve of 75 feet radius to the left 42.5 feet; thence N. 76 degrees 50 minutes 30 seconds W. 53.11 feet; thence on a curve of 325 feet radius to the right 482 feet; thence N. 8 degrees 8 minutes E. 462.03 feet; thence N. 81 degrees 52 minutes W. about 110 feet; thence S. 28 degrees 14 minutes W. 74.74 feet, S. 2 degrees 52 minutes W. 130.4 feet, S. 68 degrees 13 minutes 30 seconds W. 192.13 feet, S. 17 degrees 29 minutes W. 194.14 feet, N. 66 degrees 34 minutes 30 seconds W. 125.64 feet, S. 35 degrees 18 minutes W. 120.37 feet, S. 67 degrees 39 minutes 30 seconds W. 110.44 feet, S. 42 degrees 39 minutes 30 seconds W. 98.45 feet, S. 6 degrees 58 minutes 30 seconds W. 74.21 feet, S. 36 degrees 34 minutes W. 333.97 feet to the east side of a road leading from Cold Spring to Garrison; thence along the same N. 53 degrees 26 minutes W. 25 feet; thence N. 36 degrees 34 minutes E. 327.37 feet, N. 6 degrees 58 minutes 30 seconds E. 75.65 feet, N. 42 degrees 39 minutes 30 seconds E. 112.05 feet, N. 67 degrees 39 minutes 30 seconds E. 108.72 feet, N. 35 degrees 17 minutes 30 seconds E. 133.41 feet, S. 66 degrees 34 minutes 30 seconds E. 118.2 feet, N. 17 degrees 29 minutes E. 178.26 feet, N. 68 degrees 13 minutes 30 seconds E. 187.95 feet, N. 2 degrees 52 minutes E. 119.99 feet, N. 28 degrees 14 minutes E. 71.22 feet; thence N. 81 degrees 52 minutes W. about 112 feet to the Beverly-Warren road; thence partly along the same N. 15 degrees 20 minutes E. 701.91 feet to the centre of the before-mentioned road; thence along the same N. 14 degrees 12 minutes 30 seconds W. 19.01 feet and on a curve of 875 feet radius 109.47 feet; thence N. 21 degrees 22 minutes 30 seconds W. 250.19 feet, N. 68 degrees 37 minutes 30 seconds E. about 100 feet; thence N. 21 degrees 22 minutes 30 seconds W. 700 feet, S. 68 degrees 37 minutes 30 seconds W. 100 feet, N. 21 degrees 22 minutes 30 seconds W. 100 feet, S. 68 degrees 37 minutes 30 seconds W. 296.12 feet, N. 2 degrees 50 minutes 30 seconds W. 1,228.76 feet, N. 64 degrees 43 minutes W. 7.21 feet; thence S. 50 degrees 39 minutes W. 111.07 feet, S. 88 degrees 34 minutes 30 seconds W. 52.09 feet, N. 60 degrees 43 minutes 30 seconds W. 179.08 feet, N. 48 degrees 59 minutes W. 148.21 feet, N. 32 degrees 54 minutes 30 seconds W. 272.62 feet, N. 55 degrees 35 minutes 30 seconds W. 46.66 feet, S. 13 degrees 31 minutes 30 seconds W. 215.05 feet, S. 26 degrees 26 minutes W. 87.86 feet, S. 45 degrees 20 minutes W. 99.51 feet, S. 75 degrees 58 minutes 30 seconds W. 514.35 feet to the west side of the road to Garrison; thence along the same N. 44

degrees 1 minute 30 seconds W. 28.89 feet; thence N. 75 degrees 58 minutes 30 seconds E. 521.93 feet, N. 45 degrees 20 minutes E. 88.5 feet, N. 26 degrees 26 minutes E. 80.88 feet, N. 13 degrees 31 minutes 30 seconds E. 248.51 feet, S. 55 degrees 35 minutes 30 seconds E. 87.98 feet, S. 32 degrees 54 minutes 30 seconds E. 274.1 feet, S. 48 degrees 59 minutes E. 142.11 feet, S. 60 degrees 43 minutes 30 seconds E. 169.64 feet, N. 88 degrees 34 minutes 30 seconds E. 36.63 feet, N. 50 degrees 39 minutes E. 90.63 feet; thence N. 64 degrees 43 minutes W. 193.91 feet; thence on a curve of 325 feet radius to the right 362.19 feet; thence N. 52 minutes W. 358.45 feet; thence on a curve of 75 feet radius to the left 48.58 feet; thence N. 37 degrees 59 minutes W. 109.79 feet to the south property line of Augustus Healey; thence along the same N. 37 degrees 59 minutes W. 15 feet, N. 6 degrees 20 minutes W. 714.69 feet; thence on a curve of 300 feet radius to the right 141.64 feet; thence N. 20 degrees 43 minutes E. 559 feet to the centre of the Healey-Moffat road; thence along the same N. 89 degrees 37 minutes E. 214.37 feet; thence S. 20 degrees 43 minutes W. 636.16 feet; thence on a curve of 100 feet radius to the left 47.21 feet; thence S. 6 degrees 20 minutes E. 582.01 feet, S. 45 minutes E. 65.9 feet, S. 37 degrees 59 minutes E. 80.32 feet; thence on a curve of 275 feet radius to the right 178.14 feet; thence S. 52 minutes E. 358.45 feet; thence on a curve of 125 feet radius to the left 139.3 feet; thence S. 64 degrees 43 minutes E. 480.77 feet, S. 17 degrees 5 minutes 30 seconds W. 319.79 feet; thence on a curve of 125 feet radius to the left 43.47 feet; thence S. 2 degrees 50 minutes 30 seconds E. 386.43 feet, S. 51 degrees 49 minutes E. 255.69 feet, S. 21 degrees 22 minutes 30 inches E. 343.74 feet, S. 68 degrees 37 minutes 30 seconds W. 50 feet, S. 21 degrees 22 minutes 30 seconds E. 700 feet, N. 68 degrees 37 minutes 30 seconds E. 34.1 feet, S. 21 degrees 22 minutes 30 seconds E. 250.19 feet; thence on a curve of 1,075 feet radius to the right 134.49 feet; thence S. 14 degrees 12 minutes 30 seconds E. 301.47 feet; thence on a curve of 1,075 feet radius to the right 419.10 feet; thence S. 8 degrees 8 minutes W. 564.59 feet; thence on a curve of 125 feet radius to the left 185.39 feet; thence S. 76 degrees 50 minutes 30 seconds E. 53.11 feet; thence on a curve of 275 feet radius to the right 155.82 feet; thence S. 44 degrees 22 minutes 30 seconds E. 168.98 feet; thence on a curve of 925 feet radius to the left 209.86 feet; thence S. 57 degrees 22 minutes 30 seconds E. 157.65 feet, N. 32 degrees 37 minutes 30 seconds E. 25 feet, S. 57 degrees 22 minutes 30 seconds E. 100 feet; thence on a curve of 100 feet radius to the left 32.88 feet; thence S. 76 degrees 13 minutes E. 404.69 feet; thence on a curve of 300 feet radius to the right 118.6 feet; thence S. 53 degrees 34 minutes E. 820.96 feet; thence N. 42 degrees 24 minutes E. 128.47 feet, N. 14 degrees 4 minutes E. 189.04 feet, S. 67 degrees 7 minutes E. 114.65 feet to the west side of the Scott Hill road; thence along the same S. 21 degrees 11 minutes W. 25.01 feet; thence N. 67 degrees 7 minutes W. 86.21 feet, S. 14 degrees 4 minutes W. 166.17 feet, S. 42 degrees 24 minutes W. 132.17 feet; thence S. 53 degrees 34 minutes E. 112.27 feet to the centre of the before-mentioned Scott Hill road; thence S. 53 degrees 34 minutes E. 465.53 feet; thence on a curve of 300 feet radius to the right 298.37 feet; thence S. 6 degrees 50 minutes 30 seconds W. 292.62 feet; thence on a curve of 100 feet radius to the left 25.98 feet; thence S. 8 degrees 3 minutes E. 1,011.03 feet, N. 81 degrees 57 minutes E. 25 feet, S. 8 degrees 3 minutes E. 804.75 feet, S. 29 degrees 38 minutes W. 552.99 feet, S. 1 degree 14 minutes 30 seconds W. 1,706.46 feet; thence on a curve of 900 feet radius to the left 218.69 feet; thence S. 12 degrees 40 minutes 30 seconds E. 204.38 feet; thence on a curve of 300 feet radius to the right 163.05 feet; thence S. 18 degrees 28 minutes W. 224.15 feet; thence on a curve of 100 feet radius to the left 45.04 feet; thence S. 7 degrees 20 minutes 30 seconds E. 151.45 feet; thence on a curve of 100 feet radius to the left 45.04 feet; thence S. 33 degrees 8 minutes 30 seconds E. 229.61 feet; thence on a curve of 300 feet radius to the right 303.17 feet; thence S. 24 degrees 45 minutes 30 seconds W. 28 feet; thence N. 89 degrees 7 minutes E. 89.99 feet; thence N. 69 degrees 40 minutes E. 200.99 feet; thence S. 20 degrees 20 minutes E. 26 feet to the centre of the Phillipse Brook road; thence S. 20 degrees 20 minutes E. 34 feet, S. 69 degrees 40 minutes W. 211.28 feet, S. 89 degrees 7 minutes W. 77.08 feet, S. 8 minutes 30 seconds E. 546.13 feet, S. 18 degrees 38 minutes 30 seconds W. 269.07 feet, S. 18 degrees 44 minutes 30 seconds E. 1,255.79 feet to the south property line of Helen Bratt DuBarry; thence along the same N. 77 degrees 44 minutes 30 seconds W. about 88 feet; thence S. 18 degrees 44 minutes 30 seconds E. 5,457.83 feet; thence N. 71 degrees 15 minutes 30 seconds E. 322.97 feet; thence S. 18 degrees 44 minutes 30 seconds E. 680.4 feet to the south property line of Mary and William Odell; thence along the same S. 42 degrees 30 seconds W. 370.1 feet; thence S. 18 degrees 44 minutes 30 seconds E. 4,553.4 feet to the north boundary line of property of Solomon Owens; thence along the same S. 66 degrees 53 minutes 30 seconds E. about 100 feet; thence S. 18 degrees 44 minutes 30 seconds E. 375.15 feet; thence on a curve of 300 feet radius to the right 194.93 feet; thence S. 18 degrees 29 minutes W. 222.18 feet; thence on a curve of 100 feet radius to the left 42.48 feet; thence S. 5 degrees 51 minutes E. 538.43 feet to the centre of the Albany Post road; thence along the same S. 7 degrees 24 minutes 30 seconds W. 182.24 feet; thence S. 79 degrees 50 minutes 30 seconds E. 17.47 feet; thence S. 5 degrees 51 minutes E. 790.94 feet; thence S. 2 degrees 52 minutes E. 326.75 feet; thence on a curve of 125 feet radius to the left 89.8 feet; thence S. 44 degrees 1 minute 30 seconds E. 166.05 feet; thence on a curve of 125 feet radius to the left 43.7 feet; thence S. 64 degrees 3 minutes 30 seconds E. 161.37 feet; thence on a curve of 125 feet radius to the left 73.43 feet; thence N. 82 degrees 17 minutes E. 313.55 feet, S. 41 degrees 12 minutes E. 2,543.09 feet, crossing Conopus Hollow road and Sprout brook; thence S. 48 degrees 48 minutes W. 125 feet, S. 41 degrees 12 minutes E. 1,850.93 feet to the north boundary line of the property of Smith Lent; thence along the same S. 80 degrees 30 minutes E. 142.89 feet; thence along the east property line of the said Smith Lent S. 14 degrees 14 minutes 30 seconds E. 88.45 feet; thence S. 41 degrees 12 minutes E. 566.11 feet; thence on a curve of 275 feet radius to the left 184.71 feet; thence S. 2 degrees 43 minutes E. 285.38 feet; thence on a curve of 275 feet radius to the right 184.71 feet; thence S. 35 degrees 46 minutes W. 428.39 feet; thence on a curve of 125 feet radius to the left 74.95 feet; thence S. 1 degree 25 minutes W. 80.91 feet to the line between the counties of Westchester and Putnam; thence along the same S. 83 degrees W. 206.83 feet to the point or place of beginning.

The right to be acquired by The City of New York in the real estate described above is as follows:

The fee in Parcels Nos. 51 and 52, 57 to 63, inclusive, 66 and 67, 71 to 74, inclusive, 76 to 80, inclusive, 83, 84, 85, 86, 87, 91 and 92.

The easement in perpetuity in Parcels Nos. 54, 55, 56, 64, 65, 66a, 68, 69 and 70, and temporary easement in Parcels Nos. 53, 75, 81, 82, 88, 89 and 90.

The greatest width of the tract of land required as above described in Putnam County is 870 feet south of Garrison tunnel, and the least width of the tract is 50 feet at several points along the line where the aqueduct is in tunnel.

Reference is hereby made to the said map filed as aforesaid in the office of the County Clerk of Putnam County for a more detailed description of the real estate above described.

In case any property above described is used for any public purpose, such as a highway, etc., such use shall continue until The City of New York shall have the legal right to take possession of or change the same.

Dated December 4, 1906.

WILLIAM B. ELLISON,
Corporation Counsel.

Office and post office address for the purposes of this application, Municipal Building, corner of Chambers and Centre streets, Borough of Manhattan, City of New York.

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NEW YORK SUPREME COURT.

NINTH JUDICIAL DISTRICT.

CATSKILL AQUEDUCT.

Notice of Application for the Appointment of Commissioners of Appraisal — Westchester County.

PUBLIC NOTICE IS HEREBY GIVEN that it is the intention of the Corporation Counsel of The City of New York to make application to the Supreme Court of the State of New York for the appointment of Commissioners of Appraisal, under chapter 724 of the Laws of 1905, as amended. Such application will be made at a Special Term of the Supreme Court, to be held in and for the Ninth Judicial District, at the Courthouse in the Village of White Plains, Westchester County, N. Y., on Saturday, the 19th day of January, 1907, at 10 o'clock in the forenoon of that day, or as soon thereafter as counsel can be heard. The object of such application is to obtain an order of the Court appointing three disinterested and competent freeholders, one of whom shall reside in the County of New York, and at least one of whom shall reside in the county where the real estate hereinafter described is situated, to act as Commissioners of Appraisal under said act, and discharge all the duties conferred by the said law and the acts amendatory thereof, upon such Commissioners of Appraisal, for the purpose of providing an additional supply of pure and wholesome water for The City of New York.

The real estate sought to be taken or affected is situated in the Towns of Yorktown and Cortlandt, in the County of Westchester and State of New York.

The following is a brief description of the real estate sought to be taken and a reference to the date and place of filing of the map, and of the route of the aqueduct and of the greatest and least width of its tract:

All those certain pieces or parcels of real estate situated in the Towns of Yorktown and Cortlandt, County of Westchester and State of New York, shown on a map entitled "Northern Aqueduct Department, Section No. 1, Board of Water Supply of The City of New York. Map of real estate situated in the Towns of Yorktown and Cortlandt, County of Westchester and State of New York, to be acquired by The City of New York under the provisions of chapter 724 of the Laws of 1905, as amended, for the construction of Catskill Aqueduct and appurtenances, from Hunter's brook to Putnam County line," which map was filed in the office of the Register of the County of Westchester, at White Plains, N. Y., on the 17th day of October, 1906, as Map No. 1665, and is bounded and described as follows:

Beginning at a point in Valley street near the bridge over Hunter's brook, and running thence the following courses and distances: N. 40 degrees 57 minutes W. 1,059.16 feet, N. 4 degrees 56 minutes E. 280.89 feet, and N. 26 degrees 11 minutes W. 62.95 feet; thence on a curve of 100 feet radius to the left 54.29 feet; thence N. 57 degrees 17 minutes W. 65.49 feet; thence on a curve of 300 feet radius to the right 115.13 feet to the centre of Jacob street; thence N. 35 degrees 18 minutes W. 590.43 feet to the south boundary line of the property of Edwin D. Requa; thence along the same N. 79 degrees 30 minutes 30 seconds E. 27.54 feet; thence N. 35 degrees 18 minutes W. 530.70 feet; thence on a curve of 825 feet radius to the right 59.83 feet; thence N. 31 degrees 9 minutes W. 646.44 feet; thence on a curve of 125 feet radius to the left 61.8 feet; thence N. 59 degrees 28 minutes 30 seconds W. 151.42 feet; thence on a curve of 125 feet radius to the left 61.8 feet; thence N. 87 degrees 48 minutes 30 seconds W. 243.32 feet; thence on a curve of 275 feet radius to the right 99.14 feet crossing Field street; thence N. 67 degrees 9 minutes W. 585.40 feet; thence on a curve of 275 feet radius to the right 40.4 feet; thence N. 58 degrees 44 minutes W. 397.1 feet; thence on a curve of 125 feet radius to the left 52.5 feet; thence N. 82 degrees 47 minutes W. 63.9 feet; thence on a curve of 125 feet radius to the left 52.5 feet; thence S. 73 degrees 10 minutes W. 435.1 feet; thence on a curve of 275 feet radius to the right 132.5 feet, crossing Catherine street; thence N. 79 degrees 14 minutes W. 396.2 feet and S. 10 degrees 46 minutes W. 25 feet; thence on a curve of 300 feet radius to the right 198.2 feet; thence N. 41 degrees 25 minutes W. 1,191.51 feet, crossing the line between the Towns of Yorktown and Cortlandt and partly along the west side of Crompond road; thence on a curve of 100 feet radius to the left 46.41 feet; thence N. 68 degrees 30 seconds W. 140.24 feet; thence on a curve of 100 feet radius to the left 86.26 feet; thence S. 62 degrees 34 minutes W. 820.62 feet; thence on a curve of 100 feet radius to the left 63.49 feet; thence S. 26 degrees 11 minutes W. 266.55 feet; thence on a curve of 300 feet radius to the right 303.96 feet; thence S. 84 degrees 14 minutes 30 seconds W. 156.56 feet; thence on a curve of 300 feet radius to the right 202.13 feet; thence N. 32 degrees 50 minutes 30 seconds E. 25 feet and N. 57 degrees 9 minutes 30 seconds W. 1,057.75 feet; thence on a curve of 125 feet radius to the left 29.65 feet; thence the following courses and distances: N. 70 degrees 45 minutes W. 691.7 feet, S. 83 degrees 46 minutes 30 seconds W. 296.15 feet; S. 80 degrees 11 minutes 40 seconds W. 65.72 feet; S. 88 degrees 14 minutes 30 seconds W. 159.28 feet to the centre of Croton avenue; thence along the same N. 16 degrees 54 minutes E. 16.06 feet and N. 6 degrees 42 minutes 30 seconds E. 188.29 feet; thence N. 52 degrees 38 minutes 30 seconds W. 760.84 feet; thence on a curve of 650 feet radius to the left 580.42 feet, crossing Crompond road; thence S. 76 degrees 12 minutes W. 57.42 feet; thence N. 6 degrees 55 minutes E. about 25 feet, S. 76 degrees 12 minutes W. 370 feet, N. 13 degrees 48 minutes W. 25 feet and S. 76 degrees 12 minutes W. 321.98 feet; thence on a curve 150 feet radius to the left 12.68 feet; thence S. 71 degrees 21 minutes W. 260 feet and S. 9 degrees 26 minutes W. about 10 feet to the centre of Crompond road; thence along the same N. 87 degrees 1 minute 30 seconds W. 532.96 feet and S. 84 degrees 22 minutes 30 seconds W. 115.21 feet; thence N. 9 degrees 29 minutes E. 91.36 feet, N. 65 degrees 32 minutes 30 seconds W. 349.59 feet to the centre of Locust avenue; thence N. 65 degrees 32 minutes 30 seconds W. 218.1 feet and S. 2 degrees 14 minutes W. 320 feet to the centre of Crompond road; thence along the same N. 78 degrees 17 minutes W. 50.8 feet; thence N. 2 degrees 14 minutes E. 251 feet, N. 65 degrees 32 minutes 30 seconds W. 297.2 feet, N. 2 degrees 14 minutes E. 369.9 feet, S. 87 degrees 46 minutes E. 100 feet, and N. 2 degrees 14 minutes E. 520 feet; thence on a curve of 100 feet radius to the left 122.6 feet; thence N. 67 degrees 59 minutes W. 188.4 feet; thence on a curve of 300 feet radius to the right 200.6 feet; thence N. 29 degrees 40 minutes W. 434.5 feet; thence on a curve of 1,500 feet radius to the right 653.6 feet; thence N. 4 degrees 40 minutes W. 280.8 feet to the centre of Main street; thence N. 4 degrees 40 minutes W. 426.9 feet and N. 24 degrees 59 minutes W. 325 feet to the centre of Locust avenue; thence along the same the following courses and distances: N. 66 degrees 23 minutes W. 136 feet, N. 78 degrees 23 minutes W. 191.6 feet, N. 70 degrees 29 minutes W. 131.6 feet, N. 54 degrees 32 minutes W. 187 feet, N. 15 degrees 21 minutes W. 134.5 feet, N. 3 degrees 40 minutes W. 164.4 feet, N. 2 degrees 12 minutes E. 117.3 feet and N. 15 degrees 5 minutes W. 160.1 feet; thence N. 82 degrees 3 minutes 30 seconds E. 45.8 feet, N. 3 degrees 37 minutes E. 516.3 feet and N. 86 degrees 23 minutes W. 25 feet; thence on a curve of 1,300 feet radius to the left 809.6 feet; thence N. 32 degrees 4 minutes W. 362.1 feet, S. 77 degrees 42 minutes W. 139 feet and N. 12 degrees 5 minutes 30 seconds W. 5,014.6 feet, crossing Peekskill Hollow road to the south property line of Fannie Klein; thence along the same N. 53 degrees 8 minutes 30 seconds W. 12.07 feet; thence along the west property line of said Fannie Klein N. 8 degrees 9 minutes 30 seconds W. 783.75 feet and N. 15 degrees 16 minutes 30 seconds W. 32.22 feet; thence N. 65 degrees 27 minutes W. 172.57 feet, S. 81 degrees 21 minutes W. 250.44 feet; thence N. 12 degrees 5 minutes 30 seconds W. 75 feet, across Peekskill creek; thence N. 30 degrees 41 minutes 30 seconds E. 534.58 feet, N. 12 degrees 5 minutes 30 seconds W. 441.29 feet, S. 77 degrees 54 minutes 30 seconds W. 175 feet, N. 12 degrees 5 minutes 30 seconds W. 403 feet, N. 77 degrees 54 minutes 30 seconds E. 75 feet and N. 12 degrees 5 minutes 30 seconds W. 98.05 feet; thence on a curve of 325 feet radius to the left 248.35 feet; thence N. 31 degrees 41 minutes 30 seconds E. 166.82 feet; thence on a curve of 75 feet radius to the left 39.64 feet; thence N. 1 degree 25 minutes E. 346.39 feet to the line between the Counties of Westchester and Putnam; thence along the said county line N. 83 degrees E. 202.18 feet; thence S. 1 degree 25 minutes W. 375.97 feet; thence on a curve of 275 feet radius to the right 145.34 feet, thence S. 31 degrees 41 minutes 30 seconds W. 1,466.82 feet; thence on a curve to the left of 125 feet radius 95.52 feet, thence S. 12 degrees 5 minutes 30 seconds E. 498.05 feet, S. 77 degrees 54 minutes 30 seconds W. 50 feet, S. 12 degrees 5 minutes 30 seconds E. 441.20 feet and S. 72 degrees 31 minutes 30 seconds E. 569.06 feet; thence S. 12 degrees 5 minutes 30 seconds E. 75 feet across Peekskill creek; thence S. 52 degrees 51 minutes W. 408.46 feet, S. 12 degrees 5 minutes 30 seconds E. 280 feet, S. 77 degrees 54 minutes 30 seconds W. 50 feet and S. 12 degrees 5 minutes 30 seconds E. 1,588.95 feet to the centre of the Peekskill Hollow road; thence along the same N. 68 degrees 40 minutes E. 89.65 feet; thence S. 25 degrees 5 minutes 30 seconds E. 191.07 feet, S. 49 degrees 41 minutes 30 seconds W. 149.11 feet, S. 12 degrees 5 minutes 30 seconds E. 2,968.67 feet, N. 77 degrees 55 minutes E. 150 feet, S. 12 degrees 5 minutes 30 seconds E. 746.1 feet, S. 32 degrees 4 minutes E. 294 feet; thence on a curve of 1,500 feet radius to the right 934.6 feet; thence S. 86 degrees 23 minutes E. 25 feet, S. 3 degrees 37 minutes W. 884.4 feet; thence on a curve of 75 feet radius to the left 96.2 feet; thence S. 69 degrees 49 minutes E. 582.6 feet and S. 24 degrees 59 minutes E. 345.9 feet to the north side of Locust avenue; thence along the same S. 73 degrees 34 minutes E. 37.1 feet; thence S. 4 degrees 40 minutes E. 824.8 feet; thence on a curve of 1,300 feet radius to the left 567.2 feet; thence S. 29 degrees 40 minutes E. 234.9 feet; thence N. 82 degrees 6 minutes E. 42.9 feet to the centre of Locust avenue; thence along the same S. 21 minutes W. 81.5 feet; thence S. 29 degrees 40 minutes E. 114.2 feet; thence on a curve of 100 feet radius to the left 66.9 feet; thence S. 67 degrees 59 minutes E. 176.4 feet; thence on a curve of 300 feet radius to the right 239.5 feet to the centre of Locust avenue; thence S. 44 degrees 48 minutes E. 72.30 feet; thence S. 2 degrees 14 minutes W. 803 feet and S. 65 degrees 32 minutes 30 seconds E. 299 feet to the centre of the before-mentioned Locust avenue; thence along the same N. 13 degrees 17 minutes E. 178.4 feet; thence S. 65 degrees 32 minutes 30 seconds E. 392.05 feet and S. 24 degrees 27 minutes 30 seconds W. 175 feet; thence on a curve of 875 feet radius to the left 595.25 feet to the west property line of William Todd; thence along the same N. 9 degrees 26 minutes E. about 56 feet; thence N. 71 degrees 21 minutes E. 192.55 feet; thence on a curve of 375 feet radius to the right 31.71 feet; thence N. 76 degrees 12 minutes E. 786.55 feet to the east property line of said William Todd; thence along the same S. 6 degrees 55 minutes W. about 80 feet; thence on a curve of 850 feet radius 739.19 feet; thence S. 52 degrees 38 minutes 30 seconds E. 635.95 feet to the centre of Croton avenue; thence along the same N. 5 degrees 48 minutes E. 13.09 feet; thence S. 85 degrees 46 minutes E. 277.69 feet, S. 71 degrees 3 minutes 30 seconds E. 292.52 feet, S. 21 degrees 30 seconds W. 207.4 feet, S. 70 degrees 45 minutes E. 571.70 feet; thence on a curve of 325 feet radius to the right 77.2 feet; thence S. 57 degrees 9 minutes 30 seconds E. 1,057.75 feet; thence S. 32 degrees 50 minutes 30 seconds W. 25 feet; thence on a curve of 100 feet radius to the left 67.38 feet; thence N. 84 degrees 14 minutes 30 seconds E. 156.56 feet; thence on a curve of 100 feet radius to the left 101.32 feet; thence N. 26 degrees 11 minutes 30 seconds E. 266.55 feet; thence on a curve of 300 feet radius to the right 190.47 feet; thence N. 62 degrees 34 minutes E. 820.62 feet; thence on a curve of 300 feet radius to the right 258.78 feet; thence S. 68 degrees 30 seconds E. 129.6 feet and N. 62 degrees 58 minutes E. 87.46 feet to the west side of Crompond road; thence N. 63 degrees 10 minutes E. 37.20 feet, crossing said road; thence along the easterly side of said road S. 19 degrees 53 minutes E. 229.30 feet; thence S. 41 degrees 25 minutes E. 820.2 feet, crossing the line between the Towns of Cortlandt and Yorktown; thence N. 64 degrees 49 minutes E. 196.90 feet and S. 17 degrees 44 minutes E. 354.70 feet to the centre of the before-mentioned Crompond road; thence along the same the following courses and distances: N. 60 degrees 24 minutes E. 40.30 feet, N. 88 degrees 32 minutes E. 157 feet, S. 85 degrees 56 minutes E. 169.40 feet, N. 81 degrees 32 minutes E. 516.60 feet and N. 86 degrees 48 minutes E. 180.80 feet; thence S. 58 degrees 44 minutes E. 478 feet; thence on a curve of 75 feet radius to the left 11 feet; thence S. 67 degrees 9 minutes E. 231.10 feet and N. 61 degrees 45 minutes E. 80.90 feet to the west property line of Edwin D. Requa; thence along the same S. 28 degrees 10 minutes E. 100.10 feet; thence S. 67 degrees 9 minutes E. 225.12 feet, crossing Field street; thence on a curve of 75 feet radius to the left 27.04 feet; thence S. 87 degrees 48 minutes 30 seconds E. 243.32 feet; thence on a curve of 325 feet radius 160.68 feet; thence S. 59 degrees 28 minutes 30 seconds E. 151.42 feet, and N. 30 degrees 31 minutes 30 seconds E. 125 feet; thence on a curve of 450 feet radius to the right 222.48 feet; thence S. 31 degrees 9 minutes E. 177.52 feet; thence S. 58 degrees 51 minutes W. 125 feet, and S. 31 degrees 9 minutes E. 468.92 feet; thence on a curve of 625 feet radius to the left 45.33 feet; thence S. 35 degrees 18 minutes E. 272.38 feet to the west property line of Cortlandt De P. Field; thence along the same S. 8 degrees 1 minute 30 seconds E. 54.57 feet; thence S. 35 degrees 18 minutes E. 788.72 feet; thence on a curve of 100 feet radius to the left 38.36 feet, crossing Jacob street; thence S. 57 degrees 17 minutes E. 55.04 feet; thence on a curve of 300 feet radius to the right 162.88 feet; thence S. 26 degrees 11 minutes E. 83.51 feet; thence on a curve of 300 feet radius to the right 162.88 feet; thence S. 4 degrees 56 minutes W. 151.21 feet; thence S. 40 degrees 57 minutes E. 908.17 feet, crossing Valley street to the centre of Hunter's brook; thence along the same the following courses and distances: S. 8 degrees 45 minutes W. 39.46 feet, S. 68 degrees 33 minutes W. 30.08 feet, S. 35 degrees 6 minutes W. 45.22 feet, S. 65 degrees 13 minutes W. 42.95 feet and S. 40 degrees 9 minutes W. 41.87 feet to a bridge across said brook; thence S. 12 degrees 3 minutes W. 28.18 feet to the point or place of beginning.

The fee is to be acquired by The City of New York in all the real estate, Parcels Nos. 1 to 50, inclusive, contained in the above description.

The greatest width of the tract of land acquired in fee for the Aqueduct and its appurtenances, as above described, is 970 feet, at or near Peekskill creek, and the least width of the tract of the Aqueduct or its appurtenances, as above described, is 50 feet, at or near the Peekskill Creek Siphon, as shown on the map hereinbefore referred to.

Reference is hereby made to the said map filed as aforesaid in the office of the Register of Westchester County for a more detailed description of the real estate to be taken in fee, as above described.

In case any property above described is used for any public purpose, such as a highway, etc., such use shall continue until The City of New York shall have the legal right to take possession of or change the same.

Dated December 4, 1906.

WILLIAM B. ELLISON,
Corporation Counsel.

Office and Post Office address for the purposes of this application, Municipal Building, corner of Chambers and Centre streets, Borough of Manhattan, City of New York.

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PROPOSALS FOR BIDS AND ESTIMATES FOR THE CITY OF NEW YORK.

NOTICE TO CONTRACTORS.

GENERAL INSTRUCTIONS TO BIDDERS.

The person or persons making a bid or estimate for any services, work, materials or supplies for The City of New York, or for any of its departments, bureaus or offices, shall furnish the same in a sealed envelope, indorsed with the title of the supplies, materials, work or services for which the bid or estimate is made, with his or their name or names and the date of presentation to the President or Board or to the head of the Department at his or its office, on or before the date and hour named in the advertisement for the same, at which time and place the estimates received will be publicly opened by the President or Board or head of said Department and read, and the award of the contract made according to law as soon thereafter as practicable.

Each bid or estimate shall contain the name and place of residence of the person making the same, and names of all persons interested with him therein, and, if no other person be so interested, it shall distinctly state that fact; also, that it is made without any connection with any other person making an estimate for the same purpose, and is in all respects fair and without collusion or fraud, and that no member of the Board of Aldermen, head of a department, chief of a bureau, deputy thereof, or clerk therein, or other officer of The City of New York is, shall be or become interested, directly or indirectly, as contracting party, partner, stockholder, surety or otherwise in or in the performance of the contract, or in the supplies, work or business to which it relates, or in any portion of the profits thereof. The bid or estimate must be verified by the oath, in writing, of the party or parties making the estimate that the several matters stated herein are in all respects true.

Each bid or estimate shall be accompanied by the consent, in writing, of two householders or freeholders in The City of New York, or of a guaranty or surety company duly authorized by law to act as surety, and shall contain the matters set forth in the blank forms mentioned below.

No bid or estimate will be considered unless, as a condition precedent to the reception or consideration of any proposal, it be accompanied by a certified check upon one of the State or National banks of The City of New York, drawn to the order of the Comptroller, or money to the amount of five per centum of the amount of the bond required, as provided in section 420 of the Greater New York Charter.

The certified check or money should not be inclosed in the envelope containing the bid or estimate, but should be either inclosed in a separate envelope addressed to the head of the Department, President or Board, or submitted personally upon the presentation of the bid or estimate.

For particulars as to the quantity and quality of the supplies, or the nature and extent of the work, reference must be made to the specifications, schedules, plans, etc., on file in the said office of the President, Board or Department.

No bid shall be accepted from or contract awarded to any person who is in arrears to The City of New York upon debt or contract, or who is a defaulter, as surety or otherwise, upon any obligation to the City.

The contract must be bid for separately.

The right is reserved in each case to reject all bids or estimates if it is deemed to be for the interest of the City so to do.

Bidders will write out the amount of their bids or estimates in addition to inserting the same in figures.

Bidders are requested to make their bids or estimates upon the blank forms prepared and furnished by the City, a copy of which, with the proper envelope in which to inclose the bid, together with a copy of the contract, including the specifications, in the form approved by the Corporation Counsel, can be obtained upon application therefor at the office of the Department for which the work is to be done. Plans and drawings of construction work may also be seen there.