

Water Commissioners

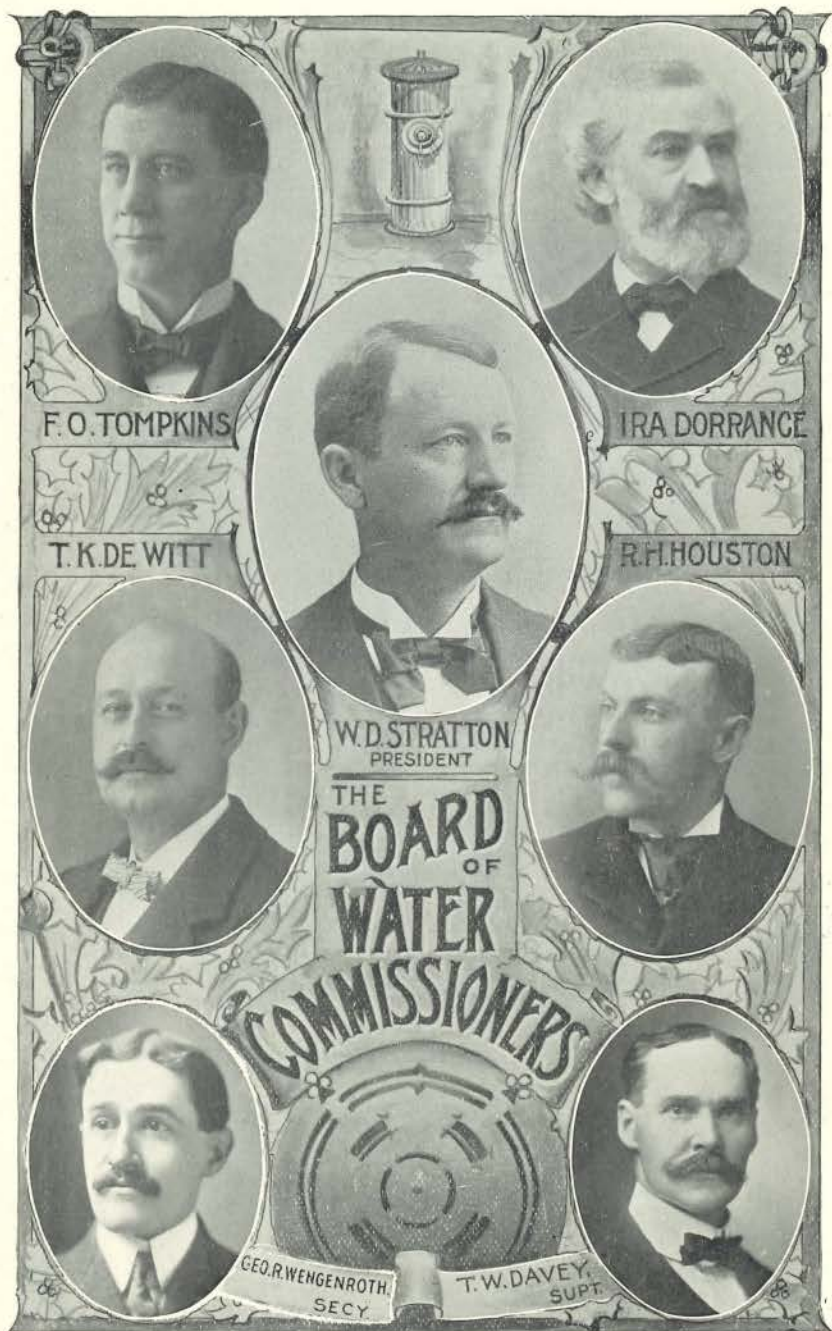
City of Middletown, N. Y.

Thirty-sixth

Annual

Report

1902



THIRTY-SIXTH

ANNUAL REPORT

OF THE

Board of

Water Commissioners

OF THE

City of Middletown

New York

For the Fiscal Year Ending November 30, 1902



L. S. & J. D. Stivers, Printers.

1902.

WATER COMMISSIONERS.

W. D. STRATTON, Term expires Jan. 1, 1903.

F. O. TOMPKINS, Term expires Jan. 1, 1907.

IRA DORRANCE, Term expires Jan. 1, 1904.

T. K. DEWITT, Term expires Jan. 1, 1905.

R. H. HOUSTON, Term expires Jan. 1, 1906.

OFFICERS AND HEADS OF DEPARTMENTS.

W. D. STRATTON President

F. O. TOMPKINS President Pro tem

GEO. R. WENGENROTH Secretary and Clerk

T. W. DAVEY Superintendent

COMMITTEES.

Executive Committee :

F. O. TOMPKINS and IRA DORRANCE

Purchasing Committee :

IRA DORRANCE and R. H. HOUSTON.

Auditing Committee :

T. W. DEWITT and F. O. TOMPKINS.

Com. on Filter Plant and Pumps :

T. K. DEWITT and R. H. HOUSTON.

New Water Supply Construction Committee :

F. O. TOMPKINS, R. H. HOUSTON, T. K. DEWITT.

NOTE:—The following are associated with the Board in connection with the new supply extension:

THOMAS WATTS Attorney.

W. R. HILL (of New York) Consulting Engineer.

DAVID R. LEE Resident Engineer.

Regular Meetings of the Board are held on the Second Saturday of Each Month, at 7:30 P. M.

All Bills against the Department must be presented on or before the second Friday of each month, or they will lay over until the following month.

Board of Water Commissioners' Report

For Year Ending November 30, 1902.

To the Honorable, the Mayor and Common Council of the City of Middletown, New York:

GENTLEMEN:—The Board of Water Commissioners herewith present for your consideration this, the Thirty-sixth Annual Report of the condition of affairs of this department for the fiscal year ending November 30, 1902.

WATER SUPPLY.

The water supply for the past year has been ample. This, however, is due to running the pumps until March and drawing water from Highland Reservoir from June until the present time. With the quantity of water stored at the close of the year, November 30, 1902, should the coming year be a dry one and without the completion of our new supply, the reservoirs would be severely taxed.

FILTER PLANT.

There is nothing more essential to man than an abundant and permanent supply of pure, wholesome water. In all that constitutes the social economy, water is an ever pressing factor, in the home, office, workshop and manufactory. Its influence, in short, is exerted in almost everything that effects human life and health.

To this end, the filter plant was instituted and has been in successful operation since April, 1900, furnishing as it does a superior quality of water free from all objectionable color, odor and taste. In view of the above, it would seem not only the most healthful, but the only safe course for those of our citizens

who have not yet connected with the city water to pursue, to discontinue the use of wells and cisterns and avail themselves of the privilege of using city water.

ACCEPTANCE—After changes as agreed to by the Filter Company had been made and satisfactory tests proved the filters to be in accordance with the contract as to quality and quantity, the Board at a special meeting held Saturday evening, August 2, 1902, formally accepted the filter plant.

FINAL PAYMENT—The final payment of \$8,740.00 was made on August 4, 1902, when the plant became the property of the City of Middletown.

SEDIMENTATION BASIN—For the purpose of preventing the wash water from the filter from flowing on certain lands, a parcel of land just below the filter plant containing four and eighty-five one hundredths (4 85-100) acres were purchased of R. A. Wallace (by consent of your honorable body), deeding him in exchange a small tract of land adjacent thereto; also allowing \$100.00 per acre for said land purchased. A dam was thereon constructed, thus creating a sedimentation basin for the purpose of holding the wash water from said plant. This will allow the water to settle, after which it can be drawn off slowly and thereby prevent the filtrate from running on certain lands. The above action was taken owing to a suit brought against the city by Mrs. Louisa Wheeler for alleged pollution of the brook running through her lands by the wash water from the filter.

CONSTRUCTION AND MAINTENANCE.

Nearly a mile of pipe has been laid during the past year. Several extensions have been asked for, but not until late in the season and not having the necessary pipe on hand, it was deemed best to deter this work until spring. A complete account of all construction and maintenance work done throughout the year is very clearly given in the report of the Superintendent, which is herewith annexed.

FINANCES.

We would invite your attention to the Clerk's report for the year, which sets forth very clearly the financial condition of affairs.

SINKING FUND—\$1,000.00 was added to the Sinking Fund created for paying off Series B bonds when due. The total amount now credited to this fund is \$4,072.67, including accrued interest.

ELECTROLYSIS.

In August of this year, the Board engaged Mr. W. M. Sheehan, an electrical engineer of New York city, to make an examination of the water pipe system for the purpose of determining whether the same conditions which were found to exist three years ago with reference to the destruction of the pipes by electrolysis from escaping electric current from the electric railway system, still existed or to what extent they had been checked. Mr. Sheehan's findings were that the conditions were not nearly as bad as they were three years ago. That the whole situation has been benefitted by the bonding that the Railroad Company has done within the past three years, but that very much more must be done before the water pipe system will be free from electrolysis. Two places are pointed out where the greatest destruction to the pipes is being done. First, within a radius of perhaps two thousand feet of the power house; second within a similar area of the vicinity of a point on East Main Street and Horton Avenue, which is due to the defective manner in which the return conductor was installed. This starts from a point near Horton Avenue on East Main street and extends to the power house and is presumably then connected with the negative terminal of the dynamos. During the past year there have been three leaks on service pipes within the vicinity of the power house, all of which have been caused by electrolysis. This is a matter of vital importance and the Traction Company should be urged to remedy the above conditions without delay or serious results are bound to follow.

NEW WATER SUPPLY CONSTRUCTION.

All work on the new water supply construction was suspended on November 29, 1902, for lack of funds. You are all familiar with the general conditions of this work and any further attempt on the subject would be superfluous, except that nothing can be done on this extension until the necessary funds are forthcoming. Should the people elect to vote the additional amount required to finish, it is the intention of your commissioners to commence work early in the spring and put forth every effort to rush to an early completion.

The Water Commissioners feeling that this department should be reimbursed to some extent for the constant growing expense and new responsibility assumed in the construction of the new water supply, decided to charge the Board of Education for all water used in public schools and Thrall Library. The following extract from a resolution passed by this Board at a meeting held January 11, 1902, is self-explanatory:

"Resolved, that a water meter be placed upon each public school building in the city; also one upon the Thrall Library, and that the regular meter rates be charged therefor. That this resolution be carried into effect on February 1, 1902.

"And it is further resolved, that a copy of the above be filed with the Common Council for approval and ratification."

The above resolution was duly ratified and approved by the Common Council on February 10, 1902, (see Section 17, page 115, Minutes of the Common Council proceedings). There is now charged upon our books against the Board of Education \$248.02, being for water used in the public schools and Thrall Library from February 1, 1902, to November 30, 1902. Meter bills have been rendered each month and several efforts have been made from time to time toward collecting the amounts due, but without avail. It is no more than just to the Water Department that other departments of the city using water be required to pay their proportion of the cost of all water used. Whatever this department uses from other departments it is re-

quired to pay for, while other departments use water and we get no return to compensate for the expense of maintaining the system.

In conclusion the Board improves the opportunity to tender thanks and grateful acknowledgments to the Mayor and members of the Common Council for all courtesies extended throughout the year.

Respectfully submitted,

W. D. STRATTON,
F. O. TOMPKINS,
IRA DORRANCE,
T. K. DEWITT,
R. H. HOUSTON,
Water Commissioners.

Attest:

GEO. R. WENGENROTH,
Clerk of the Board.

Dated December 1, 1902.

THE CITY OF MIDDLETOWN, N. Y.

POPULATION 15,000.

Middletown combines in a high degree, the advantages of an ideal residence city and a superior manufacturing center.

On the hills surrounding three sides of the city, approached by easy grades and commanding an extended view of valley, hill and mountain for miles around, are located the finest resident properties.

The manufacturing enterprises are located in the valley.

Middletown has an abundance of room for both.

Middletown's churches, schools, stores, business enterprises, paved streets and shaded avenues are not surpassed by many cities three or four times its size.

The City of Middletown is beautifully located sixty-six miles from New York City, in the heart of the famous and historic Orange County, and only two hours' ride from New York. It is noted for its healthfulness, educational advantages, transportation facilities, churches, thrift and enterprise of its citizens.

Our manufacturing interests are both extensive and varied and are constantly being added to. Labor is abundant, cheap and intelligent, and there are many natural advantages. The population is steadily increasing.

Altitude of Middletown is 565 feet above sea level; air is pure and bracing; water supply, naturally superior, is further improved by filtration; streets are clean and well kept; walks are flagged throughout the city; gutters paved and curbed.

Natural drainage is afforded by the undulating surface, in addition to which there is an excellent system of sanitary sewerage.

Churches—Seventeen, embracing all denominations.

Board of Health—Middletown has a particularly watchful and efficient Health Board. Dr. J. L. Hanmer, Health Officer.

Fire Department—The most efficient and best equipped in the State. Chas. Higham, Chief Engineer.

Electric Railway—Fifteen miles, finely equipped, connecting all parks and Goshen.

Four Railroads, including the Erie and Ontario & Western.

Railroad Depots—Four, including two beautiful modern structures. Over fifty passenger trains daily.

Express Companies—Four. Telegraph Companies—Two.

Electric Light Companies—Two. Telephone Companies—Two.

Banks—Four.

Journals—Three daily and five weekly newspapers.

Schools—Eleven Ward Schools, three Business Colleges, fine new Parochial School, Ursuline Academy and new \$90,000 High School.

The Twenty-fourth Separate Company, N. G. N. Y., occupy a fine new Armory with all the up-to-date conveniences and appliances.

New Thrall Library, a model public Library.

Parks—Thrall, Academy Avenue, Midway and Columbia Parks.

Over fifty fraternal organizations; Building and Loan Associations, etc., etc.

CLERK'S REPORT.

To the President and Members of the Board of Water Commissioners:

GENTLEMEN:—I have the honor to submit herewith the financial report for the fiscal year, February 1, 1902, to November 30, 1902:

WATER FUND.

Receipts.—Total water rent receipts were \$30,963.85, a net gain over 1901 of \$238.06. Rated consumers' account shows an increase of \$2,288.91, while metered and special consumers and sundry rates accounts show an equal decrease, which is due to the fact that this year covers but ten months. There is, however, a net gain of \$148.01 in 1902 frontage tax, over 1901. This is due to the extra fire protection rate of three mills (.003) per one dollar on assessed valuation, levied on improved property not taking city water.

The total receipts from all sources were \$32,191.22. This amount cannot be compared with 1901 as the receipts for that year include several transfers of funds.

COLLECTIONS.

Rated Consumers.—Amount charged up \$20,689.71 of which all has been paid in except \$557.47, the usual outstanding amount at this time of the year which with the ten per cent. penalty added, should all be paid in by December 31, 1902.

Special Consumers.—Total amount received \$4,048.34; balance outstanding \$125.00 (paid in since close of year).

Sundry Rates.—Total amount charged up \$86.31, all paid in.

Metered Consumers.—Total net receipts \$5,131.53. Balance outstanding November 30, 1902, as follows:

February meters	\$	33 23
March "		48 84
April "		26 60
May "		29 16
June "		33 49
July "		28 28
August "		18 88
September "		373 46
October "		559 84
November "		961 63

Total \$2,113 41

The bulk of the arrears back of September are charged against the Board of Education whose total indebtedness to this Board up to November 30, 1902, is \$248.02. The net outstanding on meter accounts after deducting the proper discount will be about \$1,633.02, of which the greater portion is not due until December 31, 1902, and January 31, 1903.

NET WORTH WATER WORKS SYSTEM.

The total net gain for the year was \$14,071.48. This amount carried to the water works account makes the total net worth of the water works of the City of Middletown, over and above outstanding bonds, \$229,548.60. The total cost of the water works system, including the new supply construction, is \$638,268.09.

NEW WATER SUPPLY CONSTRUCTION.

In addition to the yearly statement of receipts and disbursements, I have compiled for your information, a detail statement of the total expenditures of the new water works supply construction which is annexed hereto.

I desire in concluding this report to express my sincere thanks to each member of the Board for the universal courtesies extended during my term of office; likewise, to the Superintendent and all others connected with this department, for their hearty assistance and co-operation during the same period.

Respectfully submitted,

GEO. R. WENGENROTH,

Dated December 1, 1902.

Clerk of the Board.

CLERK'S FINANCIAL STATEMENT.

WATER FUND.

(For year ending November 30, 1902.)

RECEIPTS.

Rated Consumers, Semi-annual rates	\$18,216 20	
" " Additional and Fractional	687 33	
" " Sprinkling	1,166 85	
" " 10 per cent. Penalty	61 86	\$20,132 24
Metered Consumers		5,131 53
Special Consumers, Railroads	3,935 00	
" " Other Sources	113 34	4,048 34
Sundry Rates, Building Purposes	66 31	
" " Other Sources	20 00	86 31
Frontage Tax, Bal. 1901 Tax	231 32	
" " 1902 in full	1,334 11	1,565 43
		\$30,963 85
Taps		166 00
Water Boxes		224 20
Store and Materials Account		238 64
Main and Repairs, Filter Plant, Sale Coal		34 97
General Expense Account		23 04
Accounts Receivable, Ledger		235 61
Received from First National Bank, Accrued Interest on Special Filter Deposit		206 85
Received from N. W. S. Fund Materials Bought from Water Fund		98 06
Total Receipts		\$32,191 22
Cash Bal. on hand Feb. 1, 1902		2,755 18
		\$34,946 40

WATER FUND.

(For year ending November 30, 1902.)

DISBURSEMENTS.

Construction Acct., Mains	\$ 504 00	
" " Wallace Dam	1,148 86	
" " Sundries	8 29	
" " Filter Plant	178 90	
	<u> </u>	\$ 1,840 05
Maintenance and Repairs, Mains	951 29	
" " " Monhagen Res	86 86	
" " " Highland "	139 51	
" " " Shawangunk "	83 35	
" " " Pumping Station	349 34	
" " " Filter Plant	2,889 03	
" " " Meters	87 89	
" " " Sundries	14 04	
	<u> </u>	4,601 31
General Expense, Stationery and Office	336 70	
" " Printing and Advertising	289 92	
" " Freight and Express	32 22	
" " Insurance	7 50	
" " Taxes	267 71	
" " Rent	216 50	
" " Telephones	90 00	
" " Interest	11,645 00	
" " Salaries and Allowances	2,223 34	
" " Office Fixtures	2 50	
" " Sundries	1,237 07	
	<u> </u>	\$16,348 46
Store and Material Acct		\$22,789 82
Taps and Tapping Machines		2,586 57
Water Box Acct		103 69
Rated Consumers' Rebate		252 16
Frontage Tax Rebate		6 00
Accounts Payable, Ledger		31 55
Amount set apart for payment on Series B Bonds		204 36
Amount paid N. W. S. Fund, Materials Purchased		1,000 00
		<u> </u>
Total Disbursements		\$26,992 19
Cash Balance, Nov. 30, 1902		7,954 21
		<u> </u>
		\$34,946 40

STATEMENT NEW WATER SUPPLY FUND.

(For year ending November 30, 1902.)

RECEIPTS.

Cash Balance on Hand, Feb. 1, 1902	\$ 2,281 42
Balance on Hand, Feb. 1, 1902, First National Bank	48,367 00
June 19, 1902, Sale of Balance Erie Trip Ticket	23 57
October 8, 1902, First National Bank, accrued Interest on Special Fund Deposit	2,659 80
October 11, 1902, Sale of Coal	7 60
" " " Rebate on Erie R. R. Ticket (Hawley to Scranton)	45
November 11, 1902, Received from City Balance Due on Bonds	100 00
November 29, 1902, Received from Water Fund, Materials Purchased of N. W. S. Fund	18 04
	<u> </u>
	\$53,457 88

DISBURSEMENTS.

Reservoir No. 3, Stewart Dam	\$ 50 00
" " Clearing	106 25
" " Sundries	328 80
	<u> </u>
	\$ 485 05
20-inch Conduit, Additional Right of Way	550 00
" " Pipe	437 81
" " Labor	8,142 59
" " Sundries	3,260 67
	<u> </u>
	12,391 07
24-inch " Pipe	60 64
" " Specials, Valves, Lead, Etc	1,043 51
" " Labor	6,197 84
" " Sundries	374 43
	<u> </u>
	7,676 42
Monhagen Reservoir Improvement Sundries, Aerator	
Collecting Reservoir, Kinch Dam, Labor	1,331 01
" " Sundries	624 77
	<u> </u>
	1,955 78
General Expense, Engineering	1,605 00
" " Freight & Express	96 17
" " Legal Expenses	188 20
" " Damages	50 00
" " Prtg., Adv. and Office Exp.	57 55
" " Sundries	1,238 40
	<u> </u>
	3,235 32
W. H. Decker, Hauling Pipe from R. R. to Conduits	
T. M. Leshner, Contractor Conduit Lines, Etc	692 00
W. R. Hill, Consulting Engineer	19,376 30
Chas. Sundstrom, Contractor Res. No. 3, Final Payment per Engineer's Est. Less Book Acct. \$34 82, and 5 per cent. Retained	600 00
	<u> </u>
	1,993 35
Paid Water Fund for Materials Purchased	98 06
	<u> </u>
	\$48,514 81
Cash Bal. First National Bank, Nov. 30, 1902	4,943 07
	<u> </u>
	\$53,457 88

ASSETS AND LIABILITIES OF THE CITY OF MIDDLETOWN AND ITS WATER WORKS SYSTEM.

ASSETS.

CONSTRUCTION ACCT—			
Mains	\$213,653 17		
Shawangunk Kill Pumping Station	62,467 56		
Monhagen Reservoir	53,544 93		
Highland Reservoir	71,997 02		
Pumping Station, Artesian Wells	8,579 36		
Filtration Plant	30,755 58		
Wallace Dam	1,148 86		
Meters	3,447 94		
Sundries	8 29		
		\$445,602 71	
NEW WATER SUPPLY CONSTRUCTION ACCT—			
Reservoir No. 3	\$ 56,254 86		
20-inch Conduit	74,362 66		
24-inch "	30,674 91		
Monhagen Reservoir Improvement	5,379 21		
Collecting Reservoir	4,698 24		
CONSTRUCTION EXPENSE ACCT—			
Engineering	10,646 44		
Freight Acct	3,530 64		
Legal Expenses	3,995 66		
Damages	50 00		
Printing, Adv. & Office Expense	718 21		
Sundries	2,354 55		
		192,665 38	
MAINTENANCE AND REPAIRS—			
Inventory, Filter Plant, Coagulent		40 28	
GENERAL EXPENSE ACCT—			
Office Stationery, per inventory	110 80		
" Fixtures " "	739 86		
Insurance Unexpired, per inventory	64 94		
		915 60	
CASH—			
First National Bank, Special Sinking Fund Deposit	\$ 4,072 67		
First National Bank, Special Acct. N. W. S	4,943 07		
Water Acct	7,954 21		
		16,969 95	
STORE AND MATERIALS—			
Stock on Hand, per inventory	\$ 1,294 34		
Taps and Tapping Machines	535 82		
Water Box Acct	53 13		
Tools	400 00		
Horse and Wagon	145 00		
		2,428 29	

WATER RENTS OUTSTANDING—

Rated Consumers	557 47	
Metered "	2,113 41	
Special "	125 00	
		2,795 88

ACCOUNTS RECEIVABLE—

Materials Sold	10 41	
C. A. Trowbridge (rent)	62 50	
		72 91
		\$661,491 00

LIABILITIES.

BONDS OUTSTANDING—

Harlem Savings Bank 3½ per cent.	\$ 75,000 00
Middletown " " 3½ " "	10,000 00
Bushwick " " 3½ " "	12,000 00
Citizens' " " 3½ " "	100,000 00
Middletown " " 4 " "	40,000 00

SERIES A BONDS—

Poughkeepsie Savings Bank 3½ pr. ct. \$25,000 00	
Willis Sharpe Kilmer . . . 3½ " 25,000 00	
State Supt. of Banks in trust for Glens Falls Trust Co. 3½ " 20,000 00	
Jonas M. Kilmer 3½ " 20,000 00	
	90,000 00

SERIES B BONDS—

N. W. Harris & Co. . . . 3½ " 30,000 00	
Andrew Pinney, Trustee . 3½ " 15,000 00	
Fulton Savings Bank . . . 3½ " 15,000 00	
Poughkeepsie Savings Bank 3½ " 25,000 00	
Ithaca Savings Bank . . . 3½ " 15,000 00	
	100,000 00

ACCOUNTS PAYABLE—

Chas. Sundstrom, 5 per cent. retained	1,463 57	
Thos. Watts, Balance due on completion of works	1,000 00	
T. M. Lesher, 10 per cent. retained to be used by Water Board per contract	2,385 08	
Ledger Account	93 75	
		4,942 40
Net Worth Water Works, City of Middletown		229,548 60

\$661,491 00

LOSS AND GAIN ACCOUNT.

(For year ending Nov. 30, 1902.)

GAINS.

Water Rents Account	\$ 31,014 83
Frontage Tax Account	1,302 56
Store and Material Account	64 12
Taps Account	428 89
Interest on Special Bank Deposit	3,039 32

LOSSES.

CONSTRUCTION ACCOUNT—	
Meters	\$ 101 54
MAINTENANCE AND REPAIRS—	
Mains	1,095 73
Monhagen Reservoir	86 86
Highland Reservoir	139 51
Shawangunk Kill Pumping Station	83 35
Pumping Station	349 34
Filtration Plant	2,914 05
Meters	87 89
Sundries	55 02
GENERAL EXPENSE ACCOUNT—	
Office Expenses	306 96
Printing and Advertising	289 92
Freight and Express	29 58
Insurance	113 75
Rent	216 50
Phones	90 00
Interest	11,645 00
Salaries and Allowances	2,223 34
Office Fixtures	7 83
Taxes	267 71
Sundries	1,216 67
Water Box Account	5 19
Tools Account	450 00
Horse and Wagon Account	2 50
Balance—Net Gain for Year	14,071 48
	<hr/>
	\$35,849 72 \$35,849 72



HIGHLAND RESERVOIR—Looking South

ANNUAL RECEIPTS—1868 to 1902.

WATER FUND.

	Total Water Receipts.	Received from City.	All Other Receipts.	Total.
1868	\$ 1,061 79	\$	\$	\$ 1,061 79
1869	2,624 31	. . . . .	155 00	2,779 31
1870	6,556 91	. . . . .	386 68	6,943 59
1871	6,423 44	. . . . .	. . . . .	6,423 44
1872	6,704 97	†4,000 00	. . . . .	10,704 97
1873	7,707 84	2,500 00	. . . . .	10,207 84
1874	9,087 93	2,500 00	. . . . .	11,587 93
1875	9,311 88	1,800 00	. . . . .	11,111 88
1876	9,668 68	4,300 00	. . . . .	13,968 68
1877	10,280 42	3,500 00	457 79	14,238 21
1878	8,933 87	3,000 00	*16,341 46	28,275 33
1879	8,299 82	3,000 00	164 57	11,464 39
1880	8,307 88	4,500 00	422 18	13,230 06
1881	9,055 78	4,000 00	2,581 35	15,637 13
1882	11,231 55	6,000 00	2,223 50	19,455 05
1883	12,469 88	2,500 00	†29,409 97	44,379 85
1884	12,360 64	. . . . .	118 75	12,479 39
1885	17,058 60	. . . . .	235 25	17,293 85
1886	13,963 31	. . . . .	282 08	14,245 39
1887	16,640 41	. . . . .	298 86	16,939 27
1888	18,124 51	. . . . .	630 99	18,755 50
1889	16,212 15	. . . . .	830 11	17,042 26
1890	18,490 27	. . . . .	6,648 24	25,138 51
1891	21,945 98	. . . . .	6,270 58	28,216 56
1892	19,328 23	. . . . .	7,064 80	26,393 03
1893	20,508 49	. . . . .	1,404 54	21,913 03
1894	28,113 76	. . . . .	870 37	28,984 13
1895	32,300 71	. . . . .	916 25	33,116 96
1896	30,612 21	. . . . .	584 74	31,196 95
1897	29,470 43	††2,000 00	566 85	32,037 28
1898	29,297 83	2,000 00	730 11	32,027 94
1899	33,180 91	2,000 00	2,421 10	37,602 01
1900	‖30,238 87	2,000 00	5,732 03	37,970 90
1901	30,725 79	2,280 70	¶29,495 38	62,501 87
1902	30,963 85	. . . . .	1,227 37	32,191 22

† Amounts annually appropriated by the city, from 1872-1883, to help pay running expenses. Department became self-supporting in 1883.

† Includes \$25,500. Sale of 4 per cent. bonds to refund old 7 per cent. bonds.

* Includes \$15,000. Sale of 5 per cent. bonds to refund old 7 per cent. bonds.

‖ Water Rents reduced May 1st, 1900.

¶ Amount raised annually by tax to pay on Water Bonds issued prior to 10 per cent. limit.

¶ For detailed list of receipts see Receipts, Water Fund, Page 12, 35th Annual Report.

ANNUAL DISBURSEMENTS—1867-1902.

WATER FUND.

Annual Report	Year.	Construction Account.	Purchasing Account.	Maintenance and Repairs.	Expense Account.	Interest.	Salaries and Allowances.	Pumping Station Wells.	Sundries.	Total.
		\$	\$	\$	\$	\$	\$	\$	\$	\$
1	1867	75,181 59			3,016 51	1,036 03			20 00	75,181 59
2	1868	470 44		2,256 46	3,555 92	1,003 98				4,772 98
3	1869	470 67		1,534 11	192 58					5,030 58
4	1870	10,000 00		2,264 75	1,000 00					10,192 58
5	1871	3,875 27		3,085 65	575 64					4,450 91
6	1872	28,191 84		2,657 83	3,609 33	7,073 50				38,874 67
7	1873	51,253 72		1,453 73	8,643 29	9,551 50				41,960 27
8	1874	5,988 56		2,425 27	1,076 76	10,500 00				16,883 73
9	1875	2,300 10		2,300 10	2,269 33	10,489 50				13,745 39
10	1876	1,358 07		1,453 73	2,543 63	10,510 50				13,321 87
11	1877	14,829 45		2,300 10	1,229 63	10,447 50				12,987 20
12	1878	1,738 45		1,852 05	1,553 66	10,447 50				28,025 10
13	1879	2,965 03		1,628 81	1,988 89	10,556 00				13,739 61
14	1880	5,054 50		1,628 81	1,539 28	11,371 50				19,730 92
15	1881	9,098 14		4,045 06	1,539 28	11,371 50				17,985 26
16	1882	371 77		601 72	695 16	9,170 00				40,838 68
17	1883	971 77		2,256 46	706 24	8,012 50				12,816 68
18	1884	1,751 48		1,534 11	1,048 35	7,753 88				12,949 85
19	1885	2,172 92		2,264 75	1,021 27	8,083 50				15,104 13
20	1886	2,500 63		3,085 65	1,561 92	8,010 00		246 10		18,408 43
21	1887	3,307 80	1,180 24	2,657 83	1,822 69	7,955 09				16,479 78
22	1888	5,307 10	5,307 10	2,425 27	3,046 17	6,983 50				19,632 84
23	1889	5,537 31	6,731 56	1,453 73	8,458 27	6,172 50				25,333 97
24	1890	2,819 10	9,584 46	2,300 10	3,495 94	8,235 00				31,872 03
25	1891	2,300 10	4,868 59	1,852 05	6,938 89	8,235 00				27,569 38
26	1892	2,162 74	7,760 24	2,023 61	2,930 65	8,235 00				27,569 38
27	1893	2,172 92		2,023 61	2,731 10	8,235 00				27,569 38
28	1894	1,172 92		1,172 92	2,587 24	8,438 34				27,569 38
29	1895	14,829 45		1,172 92	2,587 24	8,438 34				27,569 38
30	1896	10,000 00		1,172 92	2,587 24	8,438 34				27,569 38
31	1897	13,309 69		1,172 92	2,587 24	8,438 34				27,569 38
32	1898	8,409 68		1,172 92	2,587 24	8,438 34				27,569 38
33	1899	19,711 02		823 71	2,587 24	8,438 34				27,569 38
34	1900	8,710 50		823 71	4,303 01	9,451 23				27,569 38
35	1901	1,851 52		4,613 17	3,244 37	11,945 00				27,569 38
36	1902	1,850 50		4,001 31	2,480 12	11,945 00				27,569 38

* For refunding bonds.
 † Less interest and salaries.
 ‡ For detailed list of items of which this amount is made up. See 35th Annual Report for year ending Jan. 31, 1902. Page 14.

COST OF SYSTEM.

DISBURSEMENTS BY YEAR FROM 1867 TO NOV. 30, 1902.

GENERAL FUND.

Annual Report.	Year.	Construction and Real Estate.	Annual Report.		Construction and Real Estate.
			Year.	Construction and Real Estate.	
1	1867 to 1868	\$75,161 59	19	1885	\$2,613 53
2	1868	720 44	20	1886	3,509 51
3	1869	470 67	21	1887	4,590 62
4	1870	10,000 00	22	1888	3,595 12
5	1871	3,875 27	23	1889	2,411 10
6	1872	28,191 84	24	1890	2,527 31
7	1873	31,253 72	25	1891	2,819 10
8	1874	5,306 97	26	1892	5,395 92
9	1875	986 56	27	1893	2,162 74
10	1876	267 74	28	1894	2,176 76
11	1877	1,288 07	29	1895	14,360 19
12	1878	14,829 45	30	1896	10,060 09
13	1879	1,738 45	31	1897	13,269 89
14	1880	296 03	32	1898	8,909 68
15	1881	5,054 50	33	1899	19,611 12
16	1882	908 14	34	1900	19,388 37
17	1883	371 77	35	1901	143,746 69
18	1884	1,751 48	36	1902	53,828 10

Total General Fund Disbursements, as above.....	\$497,448 53
1891—Special Fund Disbursements, 20-inch main, etc., Monhagen Reservoir to city.....	40,407 20
1891—4—Special Fund Disbursements, Highland Reservoir.....	70,777 87
1891—2—Special Fund Disbursements, 12-inch conduit, Highland Reservoir to Monhagen Reservoir.....	21,193 75
1893—Special Fund Disbursements, Pumping Station, Artesian Wells.....	8,440 74
Total Construction and Real Estate.....	\$638,268 09

NOTE—Disbursements for 1900-1901-1902 include N. W. S. Fund, Construction and Real Estate

CLASSIFICATION.

(November 30, 1902.)

Distributing Mains	\$213,661 46
Monhagen Reservoir	53,544 93
Highland Reservoir	71,997 02
Filtration Plant	30,755 58
Pumping Station, Monhagen Avenue	8,579 36
" Shawangunk Kill	62,467 56
Wallace Dam	1,148 86
Meter Equipment	3,447 94
New Water Supply Construction, value of, to November 30, 1902	192,665 38

Total cost Water Works System to Nov. 30, 1902 **\$ 638,268 09**

OUTSTANDING BONDS, November 30th, 1902.

Am't.	Issued.	Payable.	Rate of Ints.	Amount of Annual Interest.	Interest Payable Semi-Annually on	Where Payable.	Purpose Issued.	Number and Size.
\$ 75,000	May 1, 1890	May 1, 1910	3½	\$ 2,625 00	May 1—Nov. 1	Harlem Savings Bank, New York	Highland Reservoir	5-10s, 5-5s
10,000	Jan. 31, 1893	Feb. 1, 1913	3½	350 00	Feb. 1—Aug. 1	Middletown Savings Bank	Pumping Station—Driven Wells	1-10
12,000	Mar. 1, 1893	Mar. 1, 1913	3½	420 00	Mar. 1—Sep. 1	Bushwick Sav. Bank, B'klyn, NY	Highland Reservoir	12-1
100,000	Jun. 30, 1888	July 2, 1918	3%	3,500 00	Jan. 2—July 2	Citizens' Savings Bank, N. Y.	For redemption of \$101,000 of 5 pr ct and 6 pr ct ins. bearing bonds	10-10s
90,000	Apr. 1, 1901	Apr. 1, 1931	3½	3,150 00	Apr. 1—Oct. 1	Series A	Additional Supply, 1901	18-5s
100,000	July 1, 1901	July 1, 1921	3½	3,500 00	July 1—Jan. 1	Series B	Additional Supply, 1901	20-5s
40,000	Aug. 1, 1891	Aug. 1, 1911	4	1,600 00	Feb. 1—Aug. 1	Middletown Savings Bank	20-inch Pipe Line	4-10s
\$427,000 Total amount of Bonds						\$15,145 00 Total amount Annual Interest.		

* For list of owners of Series A Bonds see next page.
 † Redeemable at pleasure of City on or after July 2, 1898.
 ‡ For list of owners of Series B Bonds see next page.

LIST OF HOLDERS OF SERIES A AND B WATER BONDS—November 30th, 1902.

Amount.	Registered in Name of		Address.
	Series A	Series B	
\$ 25,000	The Poughkeepsie Savings Bank		Poughkeepsie, N. Y.
25,000	Willis Sharpe Kilmer		Binghamton, N. Y.
20,000	New York State Supt. of Banks, (in trust for Glens Falls Trust Co., of Glens Falls, N. Y.)		Albany, N. Y.
20,000	Jonas M. Kilmer		Binghamton, N. Y.
15,000	Andrew Pinney, Trustee		Palmer, Mass.
15,000	Fulton Savings Bank		Fulton, N. Y.
25,000	The Poughkeepsie Savings Bank		Poughkeepsie, N. Y.
15,000	Ithaca Savings Bank		Ithaca, N. Y.
30,000	N. W. Harris & Co.		31 Nassau St., New York City.
\$ 90,000			

NOTE—For detailed information of Series A and B Bonds see table on preceding page.

COST OF OPERATING FILTER PLANT—For Fiscal Year February 1st, 1902, to November 30th, 1902—10 months.

	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Total.
Coal	\$ 150 11	\$ 11 05	\$ 154 51	\$ 88 01	\$ 81 44	\$ 249 31	\$ 75 70	\$ 14 95	\$ 825 18		\$ 2,848 05
Co-agent			101 14				166 77				267 91
Wages, (three men)	110 25	183 75	147 00	147 00	147 00	183 75	185 00	147 00	147 00	183 75	1,581 50
Sundries	9 45	20 36	27 57	21 13	43 57	17 02	5 38		20 32	8 66	173 46
Totals	\$ 269 81	\$ 215 16	\$ 430 32	\$ 256 14	\$ 272 01	\$ 450 08	\$ 357 15	\$ 222 70	\$ 157 32	\$ 207 36	\$ 2,848 05

DETAILED STATEMENT OF DISBURSEMENTS ON NEW WATER
SUPPLY EXTENSION.

(From the commencement to the present time, Aug. 20, 1900, to Nov. 30, 1902.)

Shawangunk Reservoir—

Real Estate, Floyd Greenleaf and J. W. Acker . . .	\$ 5,000 00	
E. J. Lamson	6,000 00	
Mahala Brown	350 00	
Frank Clark	500 00	
Edson Mapes	350 00	
E. A. Brown	4,000 00	
R. Eli Mapes	500 00	
Gilbert T. Smith	750 00	
	<u>\$17,450 00</u>	
Woodward Dam	14,639 68	
Greenleaf Dam	10,076 40	
Stewart Dam	2,665 04	
Gate House	5,174 71	
Clearing	3,393 81	
Sundries Account, Shawangunk Highway	\$ 162 75	
Highland	243 60	
Stewart "	214 70	
Fencing	96 98	
Labor	450 60	
Livery	238 25	
Sundries	1,448 34	
	<u>2,855 22</u>	
	<u>\$56,254 86</u>	

20-inch Conduit—

Right of Way—Emeline Ogden	\$ 100 00	
Robert Wallace	30 00	
W. H. Mapes	150 00	
Fannie Mead	350 00	
S. S. Mapes	275 00	
E. A. Beyea	300 00	
Robert Dugdale	175 00	
E. M. Sinsbaugh and J. H. Burch	150 00	
D. C. Newkirk	450 00	
Julia A. Bertholf	450 00	
L. J. Horton	80 00	
Mary E. Case	25 00	
Katie K. Moore and Ruth A. Silk, Mortgage	200 00	
D. C. Newkirk, Add. Right of Way	150 00	
C. L. Mead, " " " "	150 00	
D. C. Newkirk, " " " "	250 00	
	<u>3,285 00</u>	
Pipes and Specials	31,363 01	
Valves, Lead, Etc	435 15	
Labor	34,915 82	
Sundries, Material, Coal, Lumber, Dynamite and Ma- chinery	4,363 68	
	<u>\$74,362 66</u>	

DETAILED STATEMENT OF DISBURSEMENTS ON NEW WATER SUPPLY
EXTENSION—Continued.

24-inch Conduit—

Right of Way—Sarah Ketchum	\$250 00	
Fred Greenleaf	15 00	
Sidney Smith	100 00	
Chas. Reynolds	500 00	
W. H. Carpenter	100 00	
Mary Leigh	350 00	
	<u>\$ 1,315 00</u>	
Pipes and Specials	17,586 69	
Valves, Lead, Etc	1,201 26	
Labor	10,029 94	
Sundries	542 02	
	<u>30,674 91</u>	
Monhagen Reservoir Improvement—		
Bertholf Dam	\$ 1,144 85	
Riprapping and Excavating	4,087 02	
Sundries	147 34	
	<u>5,379 21</u>	
Collecting Reservoir—		
Real Estate—Harriet Conklin	\$500 00	
Frederick A. Kinch	425 00	
	<u>\$ 925 00</u>	
Dam, Labor	2,890 33	
Sundries, Supplies, Etc	882 91	
	<u>4,698 24</u>	
General Expense Account—		
Engineering	\$10,646 44	
Freight and Express	3,530 64	
Legal Expenses	3,995 66	
Damages	50 00	
Printing, Advertising and Office Expense	718 21	
Sundries	2,354 55	
	<u>\$21,295 50</u>	

PROOF.

	DR.	CR.
Shawangunk Reservoir (No. 3)	\$ 56,254 86	
20-inch Conduit	74,362 66	
24-inch "	30,674 91	
Monhagen Reservoir Improvement	5,379 21	
Collecting Reservoir	4,698 24	
General Expense Account	21,295 50	
Cash Balance First National Bank	4,943 07	
T. M. Leshler Account, actual amount charged to T. M. Leshler since Sept. 17, less 10 per cent. retained	18,365 85	
Series A Bonds		\$ 90,000 00
" B "		100,000 00
Received from First National Bank Accrued Interest on Special Fund Deposit		2,659 80
Received from City Balance Due on Bonds		100 00
Leshler Contract, actual amount paid out by Board on Leshler contract from Sept. 17 to Nov. 29, 1902		20,750 93
Bills Payable, Chas. Sundstrom, 5 per cent. retained		1,463 57
Bills Payable, Thos. Watts, balance due on completion of work		1,000 00
	<u>\$215,974 30</u>	<u>\$215,974 30</u>

SPECIAL TO MANUFACTURERS.

In addition to the thrift and enterprise of its citizens, the fertile and healthful country, educational advantages, transportation facilities and cheap and intelligent labor; Middletown desires to bring to the notice of manufacturers its exceedingly low

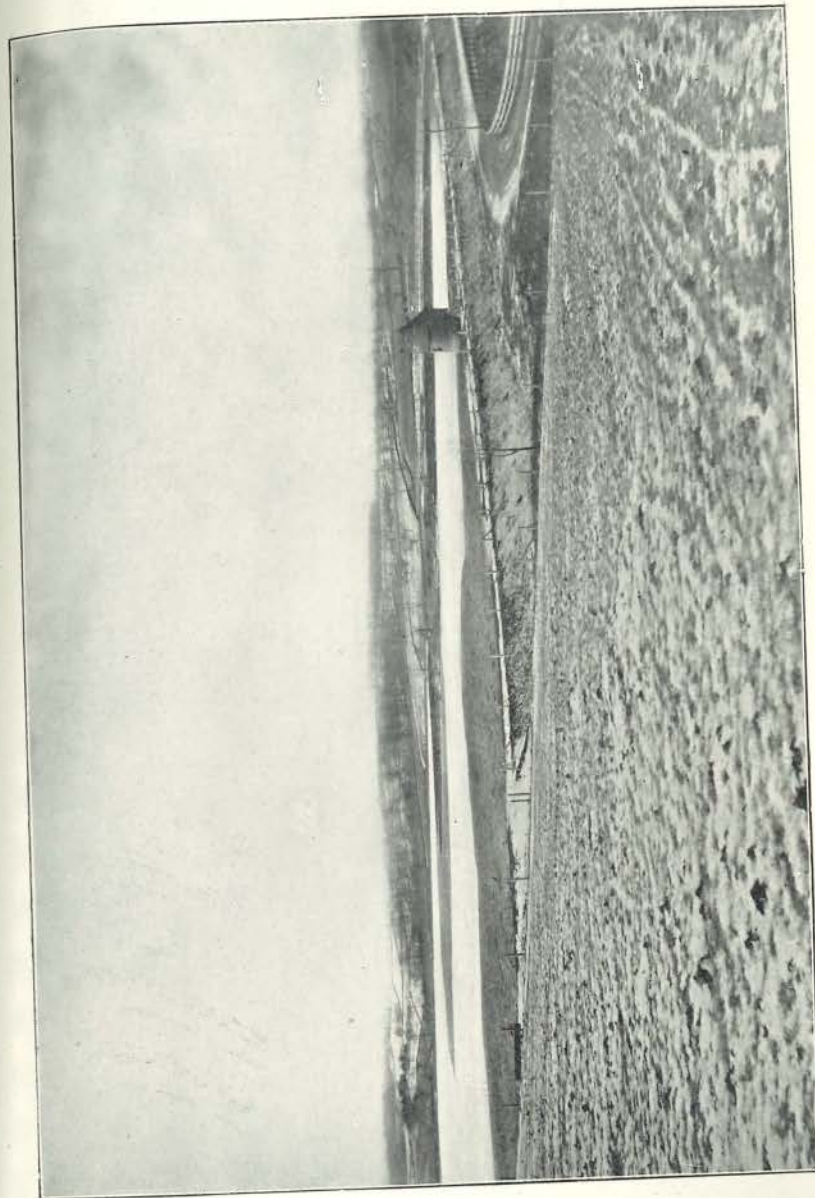
METER RATES.

1,667 cu. ft. or less per month	15 cents per 100 cu. ft		
1,667 to 2,000 cu. ft. per month lump sum .	\$2.50		
2,000 to 3,200 " "	12½ cents	"	"
3,200 to 4,000 " " lump sum	4.00		
4,000 to 6,000 " "	10 cents	"	"
6,000 to 8,000 " " lump sum	6.00		
8,000 to 16,000 " "	7½ cents	"	"
16,000 to 30,000 " " lump sum	12.00		
30,000 cu. ft. or over	4 cents	"	"

To manufacturers 50 per cent. discount on above prices if paid within 60 days from date.

25 per cent. discount to all other meter users on above rates, if paid within 60 days from date.

Minimum meter rate 75 cents per month.



MONHAGEN RESERVOIR—Looking West

SUPERINTENDENT'S REPORT.

*To the Honorable, the Board of Water Commissioners,
Middletown, N. Y.*

GENTLEMEN:—I respectfully submit the following report for the year ending November 30, 1902:

CONSTRUCTION WATER FUND.

595 ft. 6 in. iron pipe has been laid on Grove Street between North Street and Thrall Hospital in place of 4 in. cement pipe.

329 ft. 6 in. on North Beacon Street from Wisner Avenue west.

1,919 ft. 6 in. on Highland Ave., between Prospect and Sunset Streets in place of 4 in. iron pipe.

621 ft. 4 in. (taken from Highland Avenue) on Monhagen Avenue between Mill and Mulberry Streets.

574 ft. 4 in. (taken from Highland Avenue) on Mill Street to Cemetery.

577 ft. 4 in. (taken from Highland Avenue) on Everett Street between East and Academy Avenues.

476 ft. 6 in. on Monhagen Avenue from Fulton Street to top of hill in place of 4 in. iron pipe.

100 ft. 6 in. on Mill Street from Fulton Street east.

Owing to a suit brought against the City by Mrs. Louise Wheeler for alleged pollution of the brook running through her lands by the wash water from the filter, a parcel of land below the filter plant was purchased of R. A. Wallace, and a dam containing 1,000 cubic yards of earth and 250 square yards of stone paving was there constructed for the purpose of holding the wash water from said plant. This allows the water to settle, after which it can be drawn off slowly, thus preventing the filtrate from running down the brook.

WATER CRANE.

1 new water crane has been erected on Highland Avenue corner Prospect Street.

HYDRANTS.

1 single hydrant on Orchard Street at Low Block.
1 " " " Grove Street.
2 " " " Highland Avenue have been changed to double hydrants.

1 single hydrant set on Houston Avenue.
1 " " " " North Beacon Street.
1 " " " " Mill Street.
1 " " " " Monhagen Avenue.

Total number of City hydrants	257
" " " private "	39
	296

Grand total 296

VALVES.

2 6 in. gate valves set on Highland Avenue.
2 6 " " " " Mill Street corner Fulton Street.
1 4 " " " " Everett Street corner East Avenue.

TAPS.

Number of taps inserted during year 79.
Total number to date 2,270.

METERS.

According to a resolution of the Board passed on January 11, 1902, meters were placed on the following City properties:

Middletown High School.

Benton Avenue "

Bennett Hill "

Beattie Hill "

Linden Avenue "

Liberty Street "

Thrall Library.

Total number of meters now in use 141.

MAINTENANCE AND REPAIRS.

3 leaks on joints Highland main repaired.

2 " " " Monhagen " "

Repairs have also been made to the Monhagen Avenue bridge at the reservoir.

Road taxes have been worked out wherever practicable to do so.

675 ft. of wire fence has been built along the east side of Mapes' dam, Highland Lake in place of board fence which had been blown down.

ELECTROLYSIS.

During the year there have been three leaks on service pipes caused by electrolysis. These have all been found within the vicinity of the power house.

FILTER.

On June 3, 1899, a contract was made with the Continental Filter Co., of New York, for a combined Gravity and Pressure Filter with a guaranteed capacity of 2,000,000 gallons of water every 24 hours. The work was practically completed in April of 1890, and the work of filtering the water was then begun. During May, the following month, the work of operation was taken in charge by this Board, and in August, 1901, a test was made by representatives of the New York Continental Jewell Filtration Co. and the Board of Water Commissioners, which test did not prove satisfactory. After this the work of changing the filters was taken up. This work was placed in charge of Mr. R. E. Milligan for the Filter Company. In July of the same year a five days' test was made, Mr. Milligan representing the Filter Company, Prof. Jas. M. Caird, of Troy, N. Y., and your Superintendent representing this Board. This second test proved entirely satisfactory both as to the quality and quantity of water and quite according to the contract.

The Superintendent requested the Filter Company to make certain changes in the chemical feed, which they agreed to do, and the contract was then closed. (The above changes have since been made.)

A general inspection of all the water fixtures in the City was made during February and March of this year.

Rainfall for the year ending Nov. 30, 1902, being but ten months, 43.70 in.

CONSTRUCTION NEW WATER SUPPLY.

80 sq. yds. of stone paving was laid on Stewart Dam.

2,050 ft. of wire fence was built along the road through the R.

Eli Mapes farm leading to the Woodward Dam Gate House.

1,268 ft. of wire fence around land purchased of Edson Mapes.

3,220 " " " " " " " " for Collecting Reservoir.

On August 25, 1902, T. M. Leshner & Son abandoned the contract for the 20 in. and 24 in. pipe lines. By resolution of this Board, the Superintendent was directed to take charge of and continue the above work. On Sept. 17, 1902, work was commenced on the 24 in. pipe line, and on Kinch Dam, and continued until Nov. 29, 1902. During this time 6,438 ft. of 24 in. pipe was laid, completing the laying of 24 in. pipe, and making a total laid of 8,224 ft.

The Kinch Dam has been completed, also the foundation for the Gate House. On Sept. 22, 1902, work was resumed on the tunnel for 20 in. pipe line, and continued until Nov. 25, during which time 453 ft. was excavated. There yet remains 663 ft. of excavation to be made, and 2,357 ft. of 20 in. pipe to be laid through the deep cut and tunnel in order to complete the work.

Since suspending work on this extension, a watchman has been retained at the tunnel to look after the machinery and also to keep water pumped out of shaft No. 4 at dirt end.

In conclusion, I wish to extend my thanks to the Board and all its officers for courtesies extended throughout the year.

Respectfully submitted,

T. W. DAVEY,
Superintendent.

Dated December 1, 1902.

RAINFALL 1897-1902.

(In inches)

MONTH	1897	1898	1899	1900	1901	1902
January		4.33	2.91	1.49	1.00	2.37
February	2.18	4.02	1.62	4.79	00	2.89
March	3.40	3.57	7.37	2.00	5.27	2.82
April	3.19	3.67	1.59	2.41	7.75	4.62
May	4.23	4.78	1.94	3.06	6.56	3.30
June	3.27	3.78	6.03	4.04	1.49	4.34
July	9.53	7.65	8.17	6.72	4.15	6.61
August	3.35	10.40	1.94	2.14	8.59	4.30
September	3.15	1.72	8.80	2.98	4.43	6.82
October . . . . .	.72	4.59	1.43	2.57	1.59	4.79
November	5.51	4.95	1.55	2.87	2.02	.84
December	4.41	1.36	1.98	3.02	6.10	5.63
Total	42.99	54.82	45.33	38.09	48.95	49.33

METERS.

NUMBER AND KIND IN USE NOVEMBER 30, 1902.

Size in Inches.	6"	4"	3"	2"	1½"	1"	¾"	⅝"	Total.
Crown	1		3	7	2	4	23	11	51
Thompson					3	17	37	23	80
Gem		2	2	3					7
Trident								2	2
Nash								1	1
Total									141

NOTE: Meters are used only for manufacturers, hotels, saloons, livery stables and other large users.

DISTRIBUTING MAINS.

Diam. in inches.	20"	16"	14"	12"	10"	8"	6"	5"	4"	Total.
Laid prior to Jan. 31, 1902.	10,146	952	277	31,383	12,332	11,385	60,889	1,067	43,851	172,282
Laid during 1902.							3,419		1,772	5,191
Total....	10,146	952	277	31,383	12,332	11,385	64,308	1,067	45,623	177,473
Taken out during 1902.									3,090	3,090
Total number of ft. in use Nov. 30, 1902.....	10,146	952	277	31,383	12,332	11,385	64,308	1,067	42,533	174,383

33 Miles, 143 Feet.

GATE VALVES.

Size	20''	16''	12''	10'	8''	6''	4''	Total.
Set prior to January 31, 1902	7	9	33	8	19	110	107	293
Set during 1902						4	1	5
Total	7	9	33	8	19	115	108	298
Taken out during 1902							2	2
Total in use November 30, 1902	7	9	33	8	19	115	106	296

NOTE—Above does not include gates at Filter, or New Water Supply.

HYDRANTS.

	Double.	Single.	Total.
Set prior to Jan. 31, 1902	153	99	252
Set during 1902	4	1	5
Four single changed to double	add 4	deduct 4	
Total	161	96	257
Private Hydrants	32	7	39
Total in use Nov. 30, 1902	193	103	296

PUBLIC WATERING TROUGHS:—Total number in use Nov. 30, 1902 5
 SERVICES:—Total number to November 30, 1902 2,270

STANDING OF MONHAGEN RESERVOIR—1895-1902.
 (Maximum Depth 24 ft. Capacity 296,000,000 Gallons.)

Depth on	1895	1896	1897	1898	1899	1900	1901	1902
January 1	20 ft 2 in	15 ft 3 in	15 ft 0 in	19 ft 6 in	21 ft 4 in	19 ft 9 in	12 ft 5 in	16 ft 11 in
February 1	21 0	14 0	14 8	20 11	21 8	19 0	11 6	17 11
March 1	19 11	18 7	15 5	22 6	21 5	21 10	10 0	19 3
April 1	21 1	21 2	18 1	23 4	24 0	21 6	15 3	22 2
May 1	22 5	21 4	19 1½	22 7	23 8	20 8	21 2	22 3
June 1	21 5	20 0	19 9½	22 9	22 2	19 0	21 10	20 7
July 1	19 10	19 4	19 1	21 6	21 5	16 9	19 7½	18 9
August 1	18 4	18 5	19 9	20 9	21 7	15 6	17 2	17 3
September 1	17 0	17 0	19 9	23 4	20 4	14 4	16 9½	17 0
October 1	15 3	16 1	19 1	21 5	20 11	13 2	15 3	18 0
November 1	15 3	14 10	17 11½	20 3	20 6	12 5	14 1½	18 7
December 1	15 10	15 10	17 9	21 2	20 3	12 0	12 10	17 6

STANDING OF HIGHLAND RESERVOIR—1895-1902.
 (Maximum Depth 21 ft. 4 in. Capacity 560,000,000.)

Depth on	1895	1896	1897	1898	1899	1900	1901	1902
January 1	9 ft 0 in	6 ft 10 in	11 ft 2 in	12 ft 0 in	19 ft 4 in	15 ft 10 in	11 ft 4 in	12 ft 10 in
February 1	10 0	6 10	10 10	13 4	19 7	15 10	10 8	13 2
March 1	9 9	9 9	11 0	15 0	20 0	17 10	9 8½	14 8
April 1	12 0	12 0	12 2	16 1	21 4	17 11	11 9	16 0
May 1	12 2	12 3	12 3½	16 9	21 4	17 8	12 8½	16 9
June 1	11 10	12 0	11 9	17 4½	20 3	17 4	13 3	16 7
July 1	11 3	12 5	11 9	17 4	19 3	16 9	13 ½	16 5
August 1	10 10	12 4	12 0	17 3	19 2	15 11	13 5	16 10
September 1	10 9	11 8	11 6	18 6	18 3½	14 8	13 7½	17 7
October 1	9 1	11 2	10 10½	19 0	17 9½	13 6	13 10½	17 0
November 1	7 9	11 0	10 3	18 10	17 1½	12 6	13 0	17 5
December 1	6 10	11 11	10 7½	19 4½	16 3	11 10	12 2	17 0

CITY OFFICIALS.

1902.

Mayor—CHARLES E. MANCE.

*President of Common Council—JOHN H. BURCH.

†Alderman-at-Large—DWIGHT BABCOCK.

ALDERMEN.

JOHN S. COOPER, - 1st Ward	JOHN H. BURCH, - 3d Ward.
ALEXANDER S. FINN, " "	JOHN H. GAVIN, " "
CHARLES E. GARDNER, 2d "	WILLIAM S. SAYER, 4th "
HARRY B. KINGSLAND, " "	FRANCIS S. TRUEX, " "

City Clerk—I. B. A. TAYLOR.

City Treasurer—EUGENE B. QUICK.

Corporation Counsel—THOMAS C. ROGERS.

*Elected July 14, 1902, to fill vacancy caused by John D. Powers, resigned.

†Appointed July 9, 1902, to fill vacancy caused by John D. Powers, resigned.

PAST WATER COMMISSIONERS.

E. M. MADDEN	C. C. LUCKEY
J. M. MATTHEWS	JAMES G. HARDING
H. R. WILCOX	HUDSON E. HULSE
U. T. HAYES	I. R. CLEMENTS
JOHN L. BONNELL	D. W. BERRY
WILLIAM W. REEVE	R. H. DOLSON
WILLIAM MILLS	J. W. CANFIELD
JAMES B. HULSE	E. CANFIELD
JOSHUA DRAPER	A. V. BOAK
D. C. WINFIELD	W. E. DOUGLAS
N. W. VAIL	O. S. FELLOWS
JOHN WILKIN	W. H. ROGERS
CHARLES J. EVERSON	E. MILLEN
WILLIAM MILLSPAUGH	JOHN F. DICKS
G. W. WEST	

FORMER SUPERINTENDENTS.

S. D. KING	I. F. VAN DUZER
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FORMER CLERKS.

JIRAH I. FOOTE	J. M. PRICE
S. D. KING	C. J. BOYD
N. W. VAIL	D. F. SEWARD
E. S. MERRILL	JAMES M. HILL

BRIEF SUMMARY OF WORK DONE BY RESIDENT ENGINEER.

To the President and Members of the Board of Water Commissioners:

GENTLEMEN:—Following is a brief summary of work done since date of last annual report:

20 INCH PIPE LINE FROM SHAWANGUNK RESERVOIR (NO. 3) TO MONHAGEN RESERVOIR.

Up to Dec. 1, 1901, there had been laid 6,433 lin. ft. of 20 in. pipe, of which 6,006 ft. had been tested, and there was 144 lin. ft. of open trench almost ready to lay the pipe in. The trench containing the tested pipe was nearly refilled. Dec. 16, 1901, there had been laid 7,407 lin. ft. of 20 in. pipe, when the contractor decided to stop temporarily on account of the severe weather and did not resume work until Jan. 8, 1902. Feb. 20, 1902, there had been laid 10,202 lin. ft. of 20 in. pipe, being from Monhagen Reservoir to east end of the tunnel, and work had commenced west of the tunnel. March 17 work was commenced at the tunnel at eastern end. May 5, the 20 in. pipe line was all laid except through tunnel. May 15, all this pipe had been tested. May 31, all this trench was refilled. Aug. 23, the contractor abandoned the work up to which time 1,084 lin. ft. of the tunnel had been excavated, and there still remained 1,116 lin. ft. to be done, also 2,357 lin. ft. of 20 in. pipe to be laid to complete this line. Sept. 20, work was resumed at the tunnel under the supervision of the Water Board and continued until Nov. 22, up to which time 1,537 lin. ft. of the tunnel had been excavated, still leaving 663 lin. ft. to be done besides the 2,357 lin. ft. of 20 in. pipe to be laid. Work was then suspended and a watchman placed in charge to care for the apparatus and keep the water out of the shafts until work could be again resumed.

24 INCH PIPE LINE FROM KINCH DAM TO SHAWANGUNK RESERVOIR.

June 1, excavating for 24 in. pipe line was commenced. Aug. 23 when Contractor Leshner abandoned the work, there had been laid 1,786 lin. ft. of 24 in. pipe and the deep trenching between Station 77+50 and Station 72+00 was nearly completed. Sept. 17, work was resumed by the Water Board, and on Nov. 17, this pipe was all laid and tested. Dec. 10, the trench was all filled except 542 lin. ft. at Deep Cut and 157 lin. ft. near Kinch Dam. At both of the above places the pipe is sufficiently covered to be amply protected from any damages during the coming winter.

KINCH DAM OR COLLECTING RESERVOIR.

June 2, commenced work. Aug. 23, contractor had the Gate House Well about one-half completed, the Spillway about three-quarters completed and the Crib nearly finished. The core wall trench and the embankment not commenced. Sept. 16, this work was put in charge of James A. Grier, as inspector and foreman, and on Dec. 3 was all completed except building Gate House over the well.

NEW ROAD AT MONHAGEN AND AERATING CHAMBER.

No work performed on either of these items since Dec. 1, 1902.

OTHER WORK.

Dec. 24, 1901, commenced a survey for contour map of Shawangunk Reservoir to determine capacity and acreage. Finished survey May 9, 1902. Total capacity 434,024,999 gallons. Total acreage covered when full 101.261 acres.

Also surveyed the watershed of Shawangunk Reservoir. Total watershed 422.59 acres.

COLLECTING RESERVOIR.

Capacity 995,495 gallons. Acreage covered when full 1.58 acres. Watershed about 6 sq. miles.

Have also run out and determined correct fence lines on prop-

erty bought by Water Board for reservoir purposes; also survey, etc., for Sedimentation Basin on property bought of Robert Wallace.

Respectfully submitted,

DAVID R. LEE,
Resident Engineer.

December 1, 1902.