

M A N U A L

OF THE

BOARD OF PUBLIC WORKS,

FOR THE YEAR 1883-84.

PRINTED BY ORDER OF THE BOARD.

Jersey City, N. J.,
B. H. McFARLAND, STEAM PRINTER,
1884.

Regular meeting of the Board of Public Works held on Monday, July 3, 1883, at 10 a. m.

Members present—President Lembeck, Commissioners Whelan, Keeney, Helms and Van-Kuren.

Absent—Commissioner Haley.
George T. Bouten was on motion appointed Clerk pro tem.

The reading of the minutes of the previous meeting was dispensed with and they were approved as printed.

COMMUNICATIONS.

Certificate of Chief Engineer:
In favor of Michael Curley for \$1,000 on account of contract No. 385.

In favor of Michael Shannon for \$3, 60 on account of contract No. 385.

From John McCarron and others in matter of obstruction, etc. in Cottage street.

From O Grunber and others, in matter of drainage of their property.

Was received, read and referred to Committee on Streets and Sewers.

From P. Lignot, requesting an extension of water pipes in Garfield avenue.

Was received, read and referred to Committee on Extensions and Distributions

From Jacob Stranie, petitioning for plumbers license.

Was received, read and referred to Committee on Water Rates and Assessments.

PRESENTATION OF CLAIMS.

Claim of Evening Journal for \$30, \$4 90 and \$17 50.

Claim of Washburn Bros., for \$47 95.

Claim of F. A. Smith for \$30 53.

Claim of P. H. Duffy for \$13 50.

Pay-roll of employees of Street and Sewer Department for month of June, 1883, amounting to \$1,320 37

Pay-roll for the hire of horses and carts for month of June, 1883, amounting to \$759.

Were received, read and referred to Committee on Streets and Sewers.

Claim of John M. Shannon for \$1,178, of Geo. F. Taylor for \$10 55, of P. J. Meilly for \$113 50.

Pay roll of employees at Reservoir No. 2 for month ending June 30, 83, amounting to \$330.74 were received, read and referred to Committee on Pumping and Reservoirs.

Pay roll of employees on pipe yard for month ending June 30, 1883, amounting to \$865.07, was received, read and referred to Committee on Extensions and Distributions.

Claims of John Knoop for \$63 50, The Evening Journal Association for \$34, Speelman & Brush for \$45, J. B. Hyde for \$10, G. T. Bouton for \$33 34 were received, read and referred to Committee on Water Rates and Assessments.

Claims of Henry Thompson for \$93 80, T. A. Smith for \$7 09 were received, read and referred to Committee on Public Buildings and Grounds

REPORTS OF COMMITTEES.

Committee on Streets and Sewers reported on claims of the Evening Journal Association for \$30 08, John McMinnin for \$10 50, Thomas Goddard for \$95 30, J. S. Martinet for \$44.

Certificates of Chief Engineer:

In favor of Michael Shannon for \$2,000 on account of contract No. 385.

In favor of Michael Curley for \$1,000 on account of contract No. 384.

Pay roll of employees on streets and sewers for month of June, 1883, amounting to \$1,320 37.

Pay roll for hire of horses and carts on streets and sewers for month of June, 1883, amounting to \$759 as correct. Also on the following petitions:

F. H. Carling and others for the construction of a sewer in Fallside avenue from South to North street, favorable, and on claim of Garret Condon for \$33 54, adverse.

The report was accepted.

Committee on Pumping and Reservoirs reported on claims of Common Sense Metallic Packing Manufacturing Company for \$39 93, James Coyie for \$343 03, \$344 53 and \$334 73.

Pay roll of employees on Reservoir No. 2 for month of June, 1883, amounting to \$330 74, as correct.

The report was accepted.

Committee on Extensions and Distributions reported on claims of employes on pipe yard, etc., for month ending June 30, 1883, amounting to \$865 07, as correct; also on petition of Frank W. Clark, for extension of water pipe from Bramhall avenue to Union street, favorable. The report was accepted.

Committee on Water Rates and Assessments reported on claim of Geo. T. Bouton for \$33 54; Jordan Stationery Co., \$108 70 and \$30 20; Francis Whelan, \$70, as correct; also on petition of Jacob Stranie for plumber's license, favorable. The report was accepted.

Committee on Public Grounds and Buildings reported on claim of W. M. Hogan for \$3 35 as correct; also recommending the purchase of site for public school building on Linden avenue from J. J. Detwiller for the sum of \$5,000. The report was accepted.

REPORTS OF ENGINEER.

From Chief Engineer submitting letter of Andrew Clerk, Esq., was received, and on motion the letter was ordered spread in full on the minutes.

To the Honorable the Board of Public Works of Jersey City, and the Aqueduct Board of the City of Newark:

Gentlemen - I humbly beg permission to address you on the subject of Water Supply, a subject of paramount importance, not only to the cities of Newark and Jersey City, but to every one that will have to depend on the waters of the Passaic river for their supply. Every year, with the increasing population, the Passaic river is becoming more and more impure, and unless some means are immediately taken to prevent this pollution our water very soon will be unfit for domestic uses. Our River Inspector has accomplished a great deal in the past two years in remedying some of the worst causes of pollution, but the confined area in which some of the factories are situated renders a total purification almost impossible. I would therefore suggest the following plan, part of which you are already familiar with, as the true remedy to be adopted, viz:

To prevent the sewerage of Newark and the salt water from entering our works a dam should be built across the Passaic river below the intake of the Jersey City Water Works, with proper lock for the passage of vessels.

It has been suggested that the City of Newark should be prevented from polluting the river, and this is perhaps true in the abstract; but there is an element (sea water) connected with the sewerage from Newark that no human agency can prevent except by building the dam as above suggested. This is not an imaginary case, for in the dry season of 1881 were not the sewerage of Newark and the salt water precipitated upon our works, and who can tell how soon this will occur again with perhaps tenfold greater intensity rendering our water for months totally unfit for use?

The dam, with proper lock, could be built for about \$100,000, or \$53,000 for each city. This alone would render our water for many years purer than it now is, particularly if the Inspector would see that no further impurities should enter the river.

The distance from the Passaic Falls at Paterson to the J. O. Water Works, as measured by scale from Prof. Cook's map, is over 16 miles; and our chemist says that any organic matter entering the river at Paterson would be almost entirely oxidized and rendered innocuous before reaching either of the Water Works. The greater trouble at present seems to be the impurities from 8d river, and from the sewerage and the factories there. To remedy this double crib work could be built on each side of the river as far up as the Passaic Mills on the west side or Rutherford Park on the east side.

This crib-work to be built on an average of say ten feet from each shore, carried below the proposed dam, into which space also the sewerage and other impurities could enter, and gates might be constructed at the upper ends of the crib-work, which in opening at low tide from the basin created by the dam, would scour these receptacles for impurities and be offensive.

At present I believe (but this could be ascertained during the minimum flow of the river) that there is sufficient water flowing over the Dundee Dam to supply Newark and Jersey City for many years to come, so that the water in the canal or race to the Passaic Mills could be carried into the space for sewerage water. When the time comes that the water from this source is required an arrangement of pipes would carry the water from the race under the sewerage water and up to the basin.

The cost of such system of crib-work, including the dam, would be about \$315,000 to each city, and as a precautionary measure, I would recommend that this crib-work be constructed at the same time as the dam.

In the course of time, when our population largely increased, if deemed necessary, this crib-work would be carried up the river on both sides to the Passaic Falls at a cost of about \$550,000 to each city, including the proposed dam.

If brick sewers of sufficient capacity were submitted for the crib-work the cost would be about double. They would, however, last for all time, and if the owners of the land on each side of the river would agree to pay one-half the expense. I should recommend the brick intercepting sewers in place of crib-work, which would require more repairs and would have to be renewed about every fifty years. The following estimates of several plans for water supply are taken from Messrs. Cross & Howell's report to the Aqueduct Board of Newark, March 6, 1876, as likewise their estimate of the natural increase of consumption of water which I find agrees almost exactly with that consumed by Newark in 1883.

Cost of supply from Little Falls by pumping to Reservoir in great notch, 310 feet elevation.

ROCKAWAY AND PEQUANNOCK RIVERS BY CONDUIT.

Year.	Estimated Daily Consumption.	Cost.
1883.	12 1/2 million gallons.....	\$1,120,900
1890.	17.75	1,312,900
1900.	40	1,618,900
1910.	50.50	2,149,900
1920.	63.08	2,654,400
1930.	99	2,838,400
1883	.....	2,071,770
1893	.....	2,796,270
1895	.....	3,353,645
1909	.....	5,979,686
1918	.....	6,172,186
1929	.....	6,954,076

Cost of supplying from Little Falls by pumping to reservoir at Siegler's elevation 220 feet.

1884	.....	\$1,268,449
1891	.....	1,433,180
1901	.....	1,763,930
1910	.....	2,148,430
1920	.....	2,528,930
1927	.....	2,763,930

Elmwood and Pequannock Rivers—by conduit.

1884	.....	\$2,975,773
1893	.....	3,225,333
1901	.....	3,447,523
1909	.....	5,693,577
1917	.....	6,749,557
1926	.....	6,477,557

Rockaway and Pequannock—by pipe

1885	.....	\$1,616,760
1893	.....	1,844,260
1903	.....	2,031,255
1909	.....	3,886,265
1912	.....	4,074,785
1927	.....	5,162,535

To the above estimates a very large percentage must be added for the supply of Jersey City, it being so much farther from the source of supply than Newark; besides, with the exception of the waters from Little Falls, there would not be sufficient for the ultimate supply of Jersey City and Newark from the other sources named.

When you add to the above estimates the royalties demanded by the Society of Useful Manufacture, you can then better judge whether Newark and Jersey City can afford to go to the upper waters of the Passaic river for their supply.

By remaining where we are now located, of

course, as the demand for water increases, we must add to the cost of our works; but our present source of supply being so much nearer the two cities than the upper waters of the Passaic, this extra cost for an additional supply would be small in comparison. Some objections were made against the passage of a similar bill, at Trenton, during the session of the Legislature of 1881 and 1882. One objection was that the navigation of the river would be injured by the building of a dam; while an excursion of the two Boards of Water Works on the 12th inst., we started from Newark at low tide in a small steamer. After passing the Jersey City Water Works, one of the boat hands took his position in the bows with a long pole, with which he kept sounding the river for fear we should run aground. In attempting to land at the Newark Water Works we failed to do so, having grounded; nor could we get within a mile of the place we intended to land at Passaic for low water. I would ask, would not a dam at Belleville have allowed our boat to proceed up the river almost to the Dundee Dam without any danger of running aground? Again it was said that by this dam large areas of land would be flooded and the compensation for damages would be great, and that the mills at Passaic would suffer from back water. Now by the plan of intercepting crib work as suggested, neither of these catastrophes could occur. I cannot see wherein any person could be damaged, but even if some were damaged the courts would grant them pecuniary compensation surely the demands of 300,000 who drink the water ought to be considered.

As to the amount of navigation on the river on the 12th of June inst., there was not a single vessel seen except the one with the excursionists already mentioned.

By the early part of next century Jersey City and Newark will have wealth and population enough to purchase the whole rights of the mill owners and buy land sufficient on each side of the Passaic river and its tributaries, and thus purify the whole river, but to arrive at this greatness we must provide for the present generation according to our means.

This is a very serious question and no time should be lost in settling it, as the future prosperity of both cities will depend wholly on what action you may now take.

The State Commission on water supply have as yet taken no action on the supply of water for Jersey City and Newark. They would like however to know from the authorities what they really want. I do not speak by authority of the Board of State Commissioners but I feel certain that the State Commissioners will assist the authorities of both cities to the best of their ability in their endeavors to procure good and wholesome water for the people.

Yours respectfully,
ANDREW CARR.

Jersey City, June 25, 1883.

COMMUNICATIONS FROM THE MAYOR AND OTHER CITY OFFICERS.

From the Board of Aldermen presenting the following resolutions passed by said Board June 25, 1883, and approved by the Mayor June 28, 1883.

Resolved, That the following resolution adopted by the Board of Public Works June 26, 1883, is hereby approved by the Board of Aldermen:

Resolved. That by and with the concurrence and approval of the Board of Finance and Taxation, and approval of the Mayor and Aldermen, the report of the Committee on Streets and Sewers upon the application in writing of William Lawdham and others, presented to this Board on the 11th day of June, 1883, for the construction of a sewer in Jefferson avenue, from a point seventy-five feet west of Pallade avenue to and connecting with the sewer in Oakland avenue, be and the same is hereby accepted by this Board, which hereby declares its determination to make said improvement, unless at or before the time hereafter to be appointed for hearing parties in relation thereto a remonstrance shall be presented to this Board signed by the owners of property liable for the same, and the half the assessment thereon.