

# PROCEEDINGS

OF

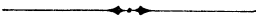
# THE COMMON COUNCIL,

OF THE

*City Engineer's Office.*

# CITY OF ROCHESTER,

FOR 1859—60.



ROCHESTER:

STEAM PRESS OF A. STRONG & CO., DEMOCRAT AND AMERICAN OFFICE.

1859.

## WATER-WORKS FOR THE CITY.

Also, the following communication from Hon. Elisha Johnson, relating to supplying the city with water; which was, on motion of Ald. Shelton, referred to a Select Committee, and ordered published:

S. W. D. MOORE, Esq.:—I herewith send a copy of my Report made in 1838 in reference to city improvements. Your daily papers and several visits has continued an interest in the progress and enterprise since 1815. In 1854 I was there three months, and had an opportunity of seeing your rapid growth and increase of wealth, as well as valuable improvements of a public character, and general private enterprise.

I reviewed my speculations in reference to City Water Supply, and noticed many objections to the plan to meet the enlarged views of a growing and important city, and particularly the difficulty of using the Genesee River or its tributaries, when fully occupied in low water (a time the city would use a full supply) by the mills and machinery of the city, as well as on all of its tributaries, and when the Southern Lakes are used as Reservoirs. The claims of the Erie and Genesee Valley Canals also add to the difficulty. The machinery for elevating water requiring an annual expense independent of outlay, which in effect adds so much capital as such annual expense would pay interest, and particularly applicable to any plan of raising water from Lake Ontario, which first impressions would desire if practicable with the revenue of a limited population.

The inquiry, when would it be expedient for the city to undertake so important a work, although possessing many advantages by the passage of the Genesee River and Erie Canal through the centre of the city, with falls, mill races, springs and wells penetrating a rock formation underlying it. These advantages not generally possessed by a large population, but existing, has delayed, but leaving the claims and necessity set forth in my Report of 1838.

The present City Debt is such as to warn the authorities not to embark in any enterprise that will not provide the interest and sinking fund to pay the principal. Any plan of supply requiring a long length of aqueduct (at \$25,000 per mile,) years of expenditure before available for revenue, interference too far with private rights, embracing expensive mechanical structures, as will subject to risks in results, would exceed the revenue and beyond the power of the city to undertake, or that prudence would dictate.

You have a city upon a high rock terrace, bounded by Lake Ontario and the Ironquoit Valley, on the North and East and South East, the Valley of the River and Big Black Creek cutting off a connection with the high table of country South, renders it impracticable to approach the city with an aqueduct of masonry at a necessary level or head of water for the Fire Department and general use. There remaining only one point that the city can be approached at a sufficient high level. I made some preliminary examinations in 1854, and introduced some instrumental tests at particular points, but was prevented by leaving for the South unexpectedly with my family—thus deferring the subject. My general knowledge of the Topography of the county by previous surveys enabled me to come to a definite conclusion that the only source of supply must come from the West, and that a level could be sustained fifty feet above the level of the Erie Canal to a point within the city,

without obstruction, and at the cheapest possible cost.

By a reference to a sketch herewith enclosed, you will see that a western supply of water can be directed in any form desired by about six miles of aqueduct or canal with common excavation, and through natural channels to a basin on the south-west side of the city. The dam at Churchville is four feet higher than the Little Black Creek Basin, and by following the line of the Railroad it would have a descent of six inches per mile by following the line of Railroad eight miles. A short ditch or surface level connects Oak Orchard Creek, and head waters of Sandy Creek into the Valley of Black Creek, giving ample supply of spring water for an aqueduct, or the use of natural channels and canal for any extent of supply required.

My own opinion (and plan I propose) is, that any extended and distant supply is not necessary, and that a more limited and cautious plan should be adopted; that is, to use all the facilities nature has placed before us: To adopt a plan of Reservoirs and the Rain Sheds near at hand where expenditure and revenue balance annually as the work of supply and distribution progresses, until the whole net work is completed; reserving the extended source of supply for future contingencies incident to an old country, crowded population, and supplies, wealth, influence, more extended outlay.

I have to trouble you with some detail to illustrate my position. In tracing the high-table land westerly from the south-west part of the city we cross a shallow basin of Little Black Creek, between the two Chili roads. The general level of this basin is fifty-eight feet above the Erie canal. This basin on the north is bounded by a terrace of rock, dipping southerly one foot in eighty, passing under said basin. The southern boundary is drift sand and gravel, resting on the rock formation, and of wide area—dividing Little and Big Black Creeks. The valley is closed on the west by continuation of sand hills, except a low pass through which the railroad is located, said sand hills forming the northern boundary of Big Black Creek Valley. On the east, by the aforesaid terrace of rock and sand hills, forming the western boundary of River Valley, except a gap through which Little Black Creek passes south-easterly, to the Genesee river. This basin is surrounded by springs, supplied by the rain shed of slope, and is the only soft water basin in the vicinity of Rochester, as no supplies reach it from the lime-stone formation. The railroad engines get here their supply of soft water. The western boundary is ten miles from the city, and the eastern three miles, leaving a basin seven miles in length and two to three miles wide.

The drainage of this basin mostly passes off in floods during the rainy season. In the dry season there is a limited supply of water held by the drift and soil, covering the valley. The name of Black Creek was taken from the dark color of the water caused by a Tamarac Swamp and other low grounds. These have been drained by the line of railroad, and now improving as grass and garden lands, and soon will be a highly cultivated surface. With drains from the Springs to the main channel, no swamp would exist, and the creek, in an improved channel, would be a clear spring brook of soft water.

To illustrate a supply by Reservoir, I give a few facts: Each family of six persons is supposed to use, directly and indirectly, (including public objects) 150 gallons per day, or 54,750 gallons per year.—Such family having a roof to house and out-houses equal to 52½ feet square, would collect that amount

of water, allowing 30 inches for the rain gauge.—To have on hand a year's supply in advance, would require a cistern, 20 feet square and 18½ feet deep,—say one-third less would hold the supply deducting the daily use. For 1,000 families 54,750,000 gallons required, and thirty-five acres of Reservoir six feet deep; or 10,000 families (or 60,000 inhabitants) 303 60-100 acres of Reservoir for a year supply in advance. The area of water shed to supply it would be 683 1-10 acres at 30 inch rain-gauge, allowing receipt of Reservoir equal to evaporation.

The above described valley or basin lying adjoining the city, as near as it could be located for convenience and suitable level, contains at 2½ by 7 miles—12,200 acres—the rain shed of which would supply 1,000,000 of inhabitants; allow half for evaporation, 500,000; or if one-quarter is saved, 250,000. Thus it would appear that this basin is ample for all city purposes, by aid of reservoirs to hold so much of the flood or surplus water as is necessary.

In the detail of execution, I propose to reduce it to the most simple form for illustration. Assuming that the water station at Little Black Creek is 58 feet above the Erie Canal, there may be 8 feet less at the mill-pond at the South Chili road, which I assume as the level for city use (50 feet). Erect a dam about quarter of a mile below the Chili road to the level of mill-pond, with gate at bottom and wasteweirs. Remove mill-dam and alluvial deposit so far as necessary to complete a basin, say of 20 acres, with clean gravel sides, and no place less than 6 feet in depth. Carry the level on the slope of creek and river valley to a point say in rear of lots on the Bull's-head and Rapids road. There erect necessary basins on a rock floor—the two basins connected by an open canal of suitable size to receive an aqueduct when required, of four feet in diameter, of brick made for the purpose, or of stone—this canal to have a descent of 4 inches per mile, about two miles in length.

This earthwork, with improvement of water courses in basin, to constitute the first outlay, except to lay wooden pipe to accommodate the high level of the west part of the city, for rents to cover the first year's outlay, and limited to \$10,000 expenditure. A similar expenditure may be made the second year in earthwork, enlarging upon the first year. This would test the power of the basin for supply, and give opportunity to mature designs for permanent work in constructing reservoirs within the basin for supply during the dry season, on a level six feet higher than the standard level. The necessary area supposed to be about 75 acres, and at different locations the most favorable. Thus revenue and expenditure, supply and distribution, would annually be increased, until the whole outwork was completed, resting at any point of expenditure. Estimates, or work specified, evaporation and leakage, area of reservoirs and sundry details must depend upon a survey and location as well as the state of the work to be executed. The great outline of expenditure for supply is earthwork, where a great work can be executed at small cost. The distribution is a known class of expenditure that is limited to actual demand and certainty of revenue to cover it.

Your long acquaintance with the city and pursuits of that character, as well as ability to investigate a city interest of this kind, induces me to address you, trusting that with the aid of your efficient and experienced Common Council, that you can settle a vexed question, that has at some pe-

riods alarmed the public mind by the magnitude of the estimates. I am, with great respect, yours,  
ELISHA JOHNSON.

LETTER OF REPLY FROM GOV. MORGAN.

Also, the following letter from his Excellency, the Governor of New York, which the Clerk was directed to file:

STATE OF NEW YORK,  
EXECUTIVE DEPARTMENT,  
ALBANY, June 29th, 1859. }

DEAR SIR:—I have been unable till now to reply to the kind invitation of the Common Council of Rochester, to visit that city, further than to inform you by telegraph that I could not accept it at the time suggested.

My engagements were such that it was impossible for me to stop at Rochester on my return from Buffalo. I hope, however, to be able at some future time to visit your enterprising city, and become better acquainted with it and its citizens.

Thanking you for the kind expression with which you accompanied the invitation,

I remain your obedient serv't.,

E. D. MORGAN.

To Hon. S. W. D. MOORE, Mayor of Rochester, New York.

ACTION UPON ORDINANCES.

LAYING IRON WATER PIPES IN EXCHANGE AND STATE STREETS.

By Ald. Lewis—Resolved, That the City Surveyor ascertain and report to this Board, the expense of laying Iron Water Pipes from Childs' Basin to Mumford street, constructing three new reservoirs and repairing the two old ones in Exchange and Ann streets. Adopted.

The Surveyor submitted such estimate.

By Ald. Lewis—Resolved, That the following improvement is expedient, namely:

The laying of iron water pipes from Childs' Basin to Mumford street, constructing three new reservoirs 8 by 16 feet in the clear and 14 feet below the level of the street, and repairing those in Exchange and Ann streets.

And Whereas, The city surveyor, under the direction of this board, has made an estimate of the whole expense thereof, and reported the same at \$2,384, which estimate is hereby approved.

Resolved, further, That the following portion of said city is deemed benefitted, and proper to be assessed for the whole expense thereof, namely:

One tier of lots on each side of Exchange street from the Erie canal to Buffalo street, one tier of lots on each side of State street from Buffalo street to the New York Central Railroad, one tier of lots on the south side of Ann street from State street to Fitzhugh street, one tier of lots on the north side of Ann street from State street to Frankfort Alley.

And the clerk is hereby directed to publish notice in pursuance of section 190 of the city charter, that all persons interested in the subject matter of said improvement are required to attend the common council on Tuesday evening, July the 12th, 1859, at half-past seven o'clock, at the common council hall, when allegations will be heard.

Adopted—Ayes 15, noes 4, Ald. Holmes, Bradstreet, Stone and Cushing.

SEWER IN NORTH ST., PAUL STREET.

Ald. Shelton presented the final ordinance for a sewer in North St. Paul st., from near Marietta st. to Scramton st.

After hearing John Clancy in opposition thereto, and the reading of a remonstrance from 144 residents of Clinton st., Judge Palmer was heard in favor of the ordinance, and debate ensued, when,

On motion of Ald. Shelton, the further consideration of the ordinance was postponed one week.

IMPROVING NEW MAIN STREET.

On motion of Ald. Selye, the Board proceeded to hear allegations in relation to the improvement of New Main street, as described in the ordinance below:

After hearing such allegations from all the persons appearing, Ald. Selye submitted the following:

AN ORDINANCE, to improve New Main street, from its western termination to the east line of Gibbs street.

The common council of the city of Rochester do ordain and determine as follows: