

gines, each of 5,000,000 gallons capacity. The contract for five boilers was awarded the following year. Including the new buildings, this duplicate pumping station cost about \$80,000.00.

In 1889 a 20 inch intake pipe 850 feet in length was laid from the central part of the north basin into the lake.

The water enters through a timber crib 20 feet long, 17 feet wide, and 10 feet high, the depth of water over crib being 10 feet.

A second duplex engine was installed at the High Level Station in 1890, with a capacity of 400,000 gallons.

In 1900 the ratepayers authorized the expenditure of \$200,000 for another force main and improving the basins, also for several large distributing sub-mains in the City. This 30 inch force main was laid along Barton street as far as Sherman avenue, thence a 24 inch pipe to Wellington street and a 20 inch to James street. The basins were enlarged to double their former capacity, and another inlet to lake provided. The foregoing works were completed in 1901. The laying of this 30 inch force main and large sub-mains increased the pressure at the City Hall about 25 lbs.

The James Street Reservoir, containing two and one-half million gallons, was constructed in 1903-4 at a cost of \$30,000.00. This reservoir has an elevation of 243 feet above the lake, or 54 feet above the Barton reservoir. A vertical pipe 60 feet in height at the Barton reservoir, connected with the inlet pipe thereto, permits water being pumped to the James street reservoir, the Barton reservoir being cut off from the system, the supply therein being held in reserve for emergencies, giving a gravity supply, if the pumping machinery should be unable to fill the James street reservoir, as was the case in July, 1911.

In the year 1901 a 36 inch intake was laid from the southerly end of basin to lake, but not of sufficient length to prevent obstruction from ice.

In 1907 the basins were cleaned and weeds removed, and electrically operated pumps decided upon.

In 1909 the air-lift mountain system at the Wentworth Street Incline was constructed to raise water to the section of the City on the Mountain. The two basins were converted into one in this year and thoroughly dredged out.

The two electrically operated turbine pumps were installed in 1910, each with a nominal capacity of 6,000,000 gallons. This year nine of the old boilers were replaced with new ones.

Capacities. The capacities of the different parts of the works, as they now exist, are approximately as follows:

1. Intake and Basin--

Intake 20 inch--Under 4 ft. head,	5,500,000	gallons per 24 hours.
" 3 "	4,800,000	" "
" 2 "	4,000,000	" "