

MANHASSET-LAKEVILLE WATER DISTRICT
ENGINEERING REPORT FOR
EVALUATION OF THE MUNSEY PARK ELEVATED WATER STORAGE TANK

August 2013
Updated February 2014

0.0 EXECUTIVE SUMMARY

The 85 year old Munsey Park elevated water storage tank is near the end of its useful life. Persistent and extensive corrosion have comprised the sanitary and structural integrity of the tank, which now requires frequent monitoring and interim emergency repairs. The capacity of the tank was designed in the 1920's. Increased population density and changes in water use patterns warrant an increase in elevated storage capacity. Furthermore, the existing tank does not satisfy current New York State Building Code standards related to hurricane wind and seismic load conditions.

To maintain reliable water service to the community, the structure must be replaced at this time. The 500,000 gallon steel structure is a critical water supply asset that must provide water to meet peak summer and fire flow demand, and which is crucial to maintaining safe water pressure levels. Loss of the tank would impair vital fire protection, and, under peak water demand conditions could result in negative pressures in the distribution system. Inadequate water pressure could result in contamination of the public water supply.

Based on current water needs of the community, which must satisfy peak and fire flow demands, and foreseeable increase in those needs, we recommend increase in storage capacity from 500,000 to 750,000 gallons. Increased development in the District since the 1929 construction of the Tank, coupled with the proliferation of residential automatic lawn irrigation systems over the past two decades, has significantly increased maximum day and peak hour water demand and stress on District infrastructure. The recommended additional capacity at the site will enable the District to maintain water pressures at adequate levels for a longer period of time during the District's peak demand period, and also supply additional capacity for fire reserve.

We recommend that the District construct a new elevated tank with larger capacity to replace the existing storage structure. A ground storage tank will not provide the means to address water pressure needs. A replacement elevated single pedestal spheroid water tank is recommended over other elevated water storage style options, because it most effectively minimizes visual intrusion from ground level, minimizes the opportunity for corrosion due to its minimal number of crevices and connections, and provides higher reliability and the lowest capital and life cycle costs, when compared to other tank types.