



BEACON HILL ELEVATED WATER TANK REPLACEMENT PROJECT

FREQUENTLY ASKED QUESTIONS

OVERVIEW

The Port Washington Water District is preparing to upgrade the existing Beacon Hill water tank (constructed in the 1930's) to ensure customers continue to receive an uninterrupted supply of the highest quality water possible. After comprehensive studies of the tank's structural integrity and condition were completed, it was determined that, due to the tanks outdated design and construction, it requires an assessment of options to address the deficiencies facing this vital piece of aging infrastructure.

Why is a new tank recommended over rehabilitation?

The existing Beacon Hill tank, which was constructed in the 1930s, is at the end of its useful life. Two comprehensive studies of the tank's structural integrity and condition were completed by the experts at H2M Architects & Engineers and D&B Engineers and Architects and each concluded that either a major rehabilitation of the existing tank or construction of a new tank is required. Expert review concludes replacing the existing tank, rather than rehabilitating it, puts the District on a fiscally responsible path for supplying high-quality water to its residents for the next several decades.

The tank design recommended for replacement has many benefits over the existing style. The new recommended design will ensure high-levels of pressure are maintained for longer which benefits firefighters during any fire emergency, reduces the amount of maintenance needed and maintenance costs, and lastly, will be designed to meet new hurricane wind and seismic load safety requirements.

Why was this specific design recommended and can it be changed?

The proposed pedestal spheroid tank design for the replacement tank has many advantages over the existing tank's design and will ensure that water is provided at the highest and most efficient levels at the lowest cost to residents. This style has an overall minimized surface area, as well as limited sharp edges and connection points, which make it less costly to refurbish and repair

compared to multi-legged tanks. Its greater interior surface area takes longer for water to vacate the tank, and its larger diameter allows pressure in the system to be maintained for longer periods of time.

Why can't the tank be relocated?

There are several very important reasons for keeping the tank at its existing location. The supply area and distribution systems are already fully developed and the District has made significant investments to improve the current property to ease operations and maintenance. Using the existing site also minimizes the impact on the community when you consider the disruption caused by building a brand new facility. Lastly, the site's natural elevation is crucial for maintaining adequate pressure throughout the distribution system and removes the need for a much taller tower.

Why is an elevated water tank important to the water supply system?

The height water is stored plays a major role in keeping any water system pressurized. Elevated water tanks keep water above the distribution system, which means as long as water is in the tank pressure will be maintained within the system. Ground storage tanks rely on electric pumps to keep pressure within the system at all times. If power is lost to the pumps, the system will lose its pressure. However, with an elevated water tank, even if power is lost, the water held in the tank will keep the system pressurized. This means even when there are power outages, your homes and our fire hydrants will remain pressurized.

Can the District utilize a system that doesn't require the need for an elevated tank?

A non-elevated tank solution would be complex, more expensive and is not recommended by the District or its engineers. It would require the installation of a ground level tank and a separate booster pumping station to meet the pressure requirements of the distribution system. This system would require the constant running of an electric motor, which increases energy use and will have both a negative financial and environmental impact on the District.

Additional drawbacks to this solution include:

- The need to have a PWWD Operations Employee visit the site on a daily basis
- Must include a standby power supply (generator) to provide flow during a power outage
- This switchover to generator power during a power failure can provide a period of time when flow and pressure are not provided.
- When electrical demand is high, the booster pumping station would increase the stress on the electrical grid.
- Operation and maintenance costs for a ground level tank and booster station are more expensive than elevated tanks.

How much would construction of a new tank cost?

Construction of a new Beacon Hill tank is estimated to cost \$5,095,000. Infrastructure upgrade financing is already in place. Building a new tank would be a long-term investment and provides residents with a lower annual cost compared to rehabilitating the existing tank. The estimated annual cost of a new tank is \$585,000. This figure considers the new tank's capital, operating and maintenance costs required over the next 45 years.

How much would it cost to repair the existing tank?

Rehabilitating the existing tank is estimated to cost \$3,216,000. Infrastructure upgrade financing is already in place. The annual operating costs for a tank replacement over the next 45 years are estimated to be \$669,000. It is important to remember that refurbishing the current tank will only add an additional 10-15 years to its useful life, which gives this option, and the community, an unfavorable return on investment. Although the short-term capital cost of rehabilitating the existing tank is less, the overall annual cost in a 45-year forecast is greater because the estimates include the funds needed for the replacement tank within 15 years.

How much would a Ground Storage Tank and Booster Pumping Station cost?

A ground storage tank and booster pumping station, which the District and its engineers do not recommend, would require an estimated capital investment of \$6.3 million. Taking into consideration the capital cost and the costs for operations and maintenance over the next 45 years, the estimated annual operating costs come in at a significant \$1.3 million, compared to the cost of only \$585,000 for the replacement tank.

How would water be supplied between the demolition of the old tank and construction of the new tank?

The District would utilize the Sands Point Water Department's South Road tank for the majority of the time while the new Beacon Hill tank is being completed. Although the Sands Point tank is not part of the Port Washington Water District, an interconnection pipe installed years ago will be utilized for this project. During the summer months when demand is high and Sands Point requires additional water for its operations, the PWWD would use the Hewlett Well #4 and Longview Booster Station to provide adequate flow and pressure.

Why can't the system supplying water during the construction be utilized permanently?

The use of auxiliary sources is only a temporary solution to provide the needed supply of water during the construction portion of this project. These systems were not designed to become a permanent solution for the District's water supply needs.

Has an environmental impact study been completed for the projects under consideration?

An environmental impact study will be completed once the design phase of the selected project is completed. The study will adhere to the guidelines set forth by the State Environmental Quality Review Act (SEQRA). Construction cannot begin until the environmental impact study is approved by the necessary government agencies, such as the Nassau County Health Department.

When will the project begin?

There are many steps that must be completed before any construction on the site commences. The District will first engage the community to inform them of the plans for the water tank and to gather their feedback on the plans. Once all comments from the community are gathered, the District's engineers will begin developing plans to ensure its residents are adequately supplied with clean water.

What is PWWD's Commitment to the Community?

The Port Washington Water District is extremely committed to the community and to ensuring that their input is not only heard, but considered throughout this process. When the District purchased the land in front of the existing tank, we did so to improve the overall aesthetics of the site and ease our maintenance operations. We added significant landscaping to conceal the tank's presence as best as possible and will continue to add new trees and shrubbery once construction on the site is completed. It is very important for the community to have an open line of communication with us before, during and after the construction is completed. We will provide all necessary contact information for residents to reach us with any questions or concerns.