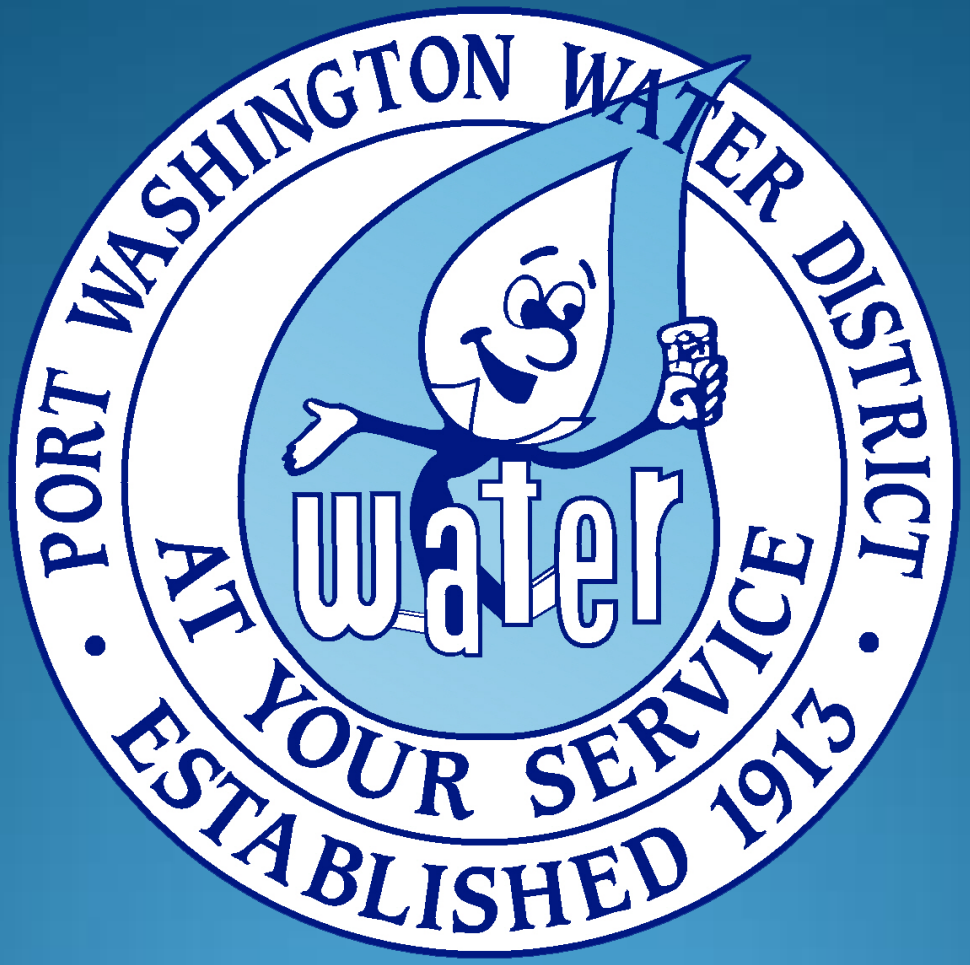


Beacon Hill Water Tower Improvement Project

PWWD Summary

- Established in 1913
  - One of the oldest water districts on Long Island
- Provides customers with approximately 1.3 billon gallons of water each year from 12 underground wells
- Current capacity to store more than 24 million gallons of water
- More than 147 miles of water mains ranging from 4” to 24” in diameter

Recent Improvements & Upgrades

- More than $10 million in improvements/upgrades since 2010
- Installation of smart meter program to increase the efficiency and management of water use
- Replaced more than 4,500 feet of old water mains on Circle Drive
- Replaced all water mains, fire hydrants and water services in the Manhasset Isle portion of Manorhaven
- Nitrate treatment facility installed at Well #4
- Packed tower aeration treatment system at Well #6 installed to treat water for organic materials
  - The District was honored with an architectural award from the American Water Works Association for this project
- Tablet chlorinators installed at each pumping station
- Purchased land in front of the Beacon Hill water tower site to improve access
  - Significant landscaping was added to beautify the property

Project Overview

- PWWD is preparing to upgrade the existing water tank to ensure the continued health and safety of the water supply.
- Studies show a major rehabilitation project is needed.
- We are determining which option is best for the District, our residents and the community as a whole.

Importance of Elevated Water Tanks

- Elevation is vital for maintaining pressure within the water supply system
- Elevated tanks hold water above the distribution system
  - Water in the tank means you will have pressure
- Ground level storage tanks require pumps to create pressure
- Elevated tanks maintain pressure without pumps
  - This means pressure is kept during power outages
  - This ensures fire hydrants and homes have pressure during emergencies
  - Surge protection to prevent water main breaks

Current Water Tank Location

Current Beacon Hill Water Tank

- Serves nearly half of the District's 30,000 residents and 9,350 households and businesses
- Built in the 1930's – 80+ years later it is at the end of its useful life
- Capacity of 250,000 gallons
- Riveted, steel, multi-leg style tank with conical roof
- Last painted in 1999 (approximately 17 years ago)

Current Beacon Hill Water Tank

- Current Condition Evaluation:
  - Conducted by H2M Architects & Engineers
  - Exterior rust and deterioration discovered throughout
  - Exterior coatings are failing to protect against corrosion
  - Moderate degree of pitting (surface corrosion) on compromised areas
  - Requires major rehabilitation project to address deficiencies identified during inspection

Photos from Evaluation

- Severe corrosion on base of roof vent
- Exterior roof is warped and in poor condition

Photos from Evaluation

- Severe corrosion on the roof overhang

- Moderate degree of concrete foundation surface cracking

Next Steps

- There are three options to consider:

1. Install a ground level water storage tank and booster pump station

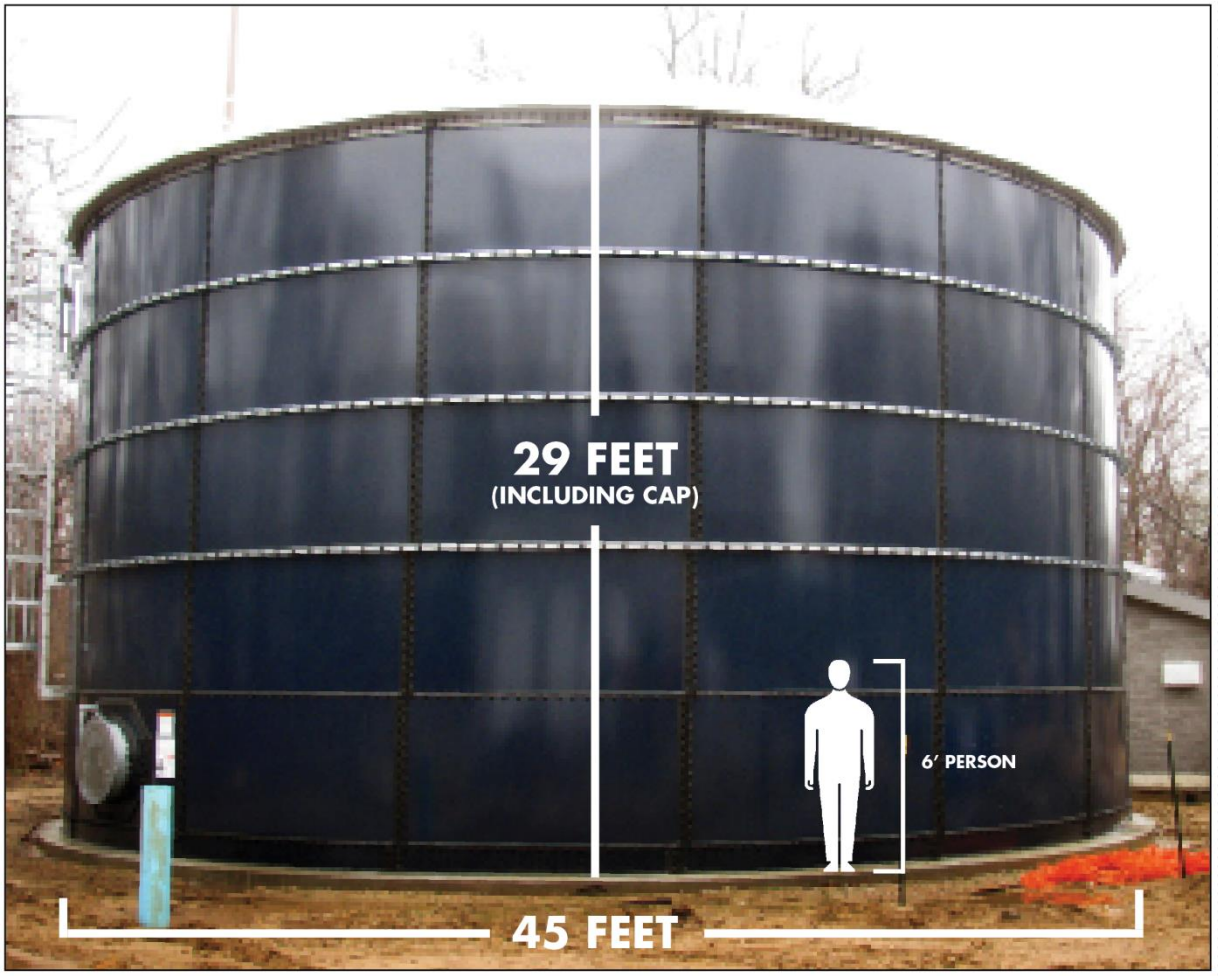
2. Rehabilitate the existing water tank

3. Replace the existing water tank in kind

Ground Level Water Storage and Booster Pump Station

- Facts:
  - Capacity would be the same – 250,000 gallons
  - Requires installation of ground level storage tank and a separate booster pumping station to provide pressure
  - Requires the constant running of electric pump(s)
    - Increases energy use and demand on the electric grid
    - Double pumping
  - Standby power system (generator) must also be installed on-site in case of a power outage
  - Operation and maintenance costs are more expensive than elevated tanks

Sands Point Ground Level Water Storage Tank



Tank Rehabilitation

- Facts:
  - Extends tank's useful life for an additional 15-20 years
    - A new tank would then be needed as the tank will be around 100 years old
  - Multi-legged style tank is no longer recommended and is being phased out for a newer, more efficient and resilient design
    - Difficult and expensive to paint due to riveted plates and latticed construction elements
  - Still requires lengthy construction timeline for repairs

Tank Replacement

- Facts:
  - Capacity would be the same – 250,000 gallons
  - Overflow height would be the same – 94 feet
  - Design keeps pressure in system longer, which benefits firefighting operations during emergencies
  - Requires less maintenance and is easier to repair due to reduced surface area and welded construction elements
  - Designed to meet new hurricane wind and seismic load safety standards

Additional Benefits of a Tank Replacement: Technology Improvements

- Proposed New Design:
  - Has limited connection points, as well as sharp and exposed edges, making it less susceptible to rust and discoloration
  - Less costly to maintain and refurbish
  - Pressure will be maintained in the system for a longer period of time
  - Capable of providing all required flows (including fire-flow demand), pressures and storage
  - Smaller overall footprint

Can the Tank Be Moved To a Different Location?

- The tank's location is a function of elevation in order to provide optimum pressure for community fire protection.
- Average ground elevation of this plant is about 265 feet above mean sea level.
- The site's elevation is likely the reason it was selected for this tank back in the 1930's as a community grew around it.
- The existing water transmission and distribution system has been designed and constructed to accommodate a water storage tank at the existing location.
- The onsite replacement has the least impact on the environment and community.

Financing and Cost Overview

- The capital cost of the selected project will be funded as part of an $18.4 million bond passed in 2010 for various infrastructure improvements.

- Ground water storage tank and booster pump station
  - Estimated capital investment = $6,252,000
  - Estimated annual cost over 45 years = $1,279,000
    - Considers capital investment, maintenance, repair and operating costs for each year

- Tank Rehabilitation
  - Estimated capital investment = $3,216,000
  - Estimated annual cost over 45 years = $669,154
    - Considers capital investment, maintenance, repair and operating costs for each year

- Tank Replacement
  - Estimated capital investment = $5,095,000
  - Estimated annual cost over 45 years = $585,419
    - Considers capital investment, maintenance, repair and operating costs for each year

Which Project is Recommended?

- D&B Engineers and Architects, P.C. recommend a full tank replacement
- A replacement tank would ensure the District is supplied with clean water with a sufficient flow and pressure for the next 50-100 years
- Comes with the lowest projected annual cost
  - Keeps water bills lower and provides customers with the greatest return on investment

What Would A New Tank Look Like?

Existing

Proposed

What Would A New Tank Look Like?

Existing

Proposed

Construction and Community Impact Mitigation

- Given the tank's location within the community, any improvement project will unfortunately come with some inconveniences.
- We are committed to minimizing the impact/inconvenience on the community and surrounding residents.
- Construction will only occur Monday through Friday, 8:00 am through 4:00 pm. Weekend and holiday work will **not** be permitted.
- Road closures will be coordinated with the local police department and will not be permitted during scheduled school bus stops.
- Part of the bidding process will require the selected contractor to have an off-site staging area to store materials and equipment.
- The community will be provided with an on-site contact person who will be able to address concerns 24/7.
- A webpage will be set-up to provide construction activity information in advance.
- Once a project and contractor are selected, we will be able to determine a construction timeline.
- Sands Point tank will be utilized to supply water while construction occurs at the Beacon Hill site.

Estimated Design and Construction Schedule

- Design and Nassau County Department of Health (NCDH) Permitting:
  - Approximately 4-6 months

- Construction:
  - Bidding/Award/Contract Execution – 2 months
  - Shop Drawings and Fabrication – 6-8 months
    - No on-site activity occurs during these two stages
  - Existing Tank Demolition – 3-4 weeks
  - Foundation Construction – 4-6 weeks
  - Steel Erection – 3 months
  - Coating Application – 2-3 months
  - Testing and Start-up – 2-4 weeks
    - Actual on-site work activities will occur

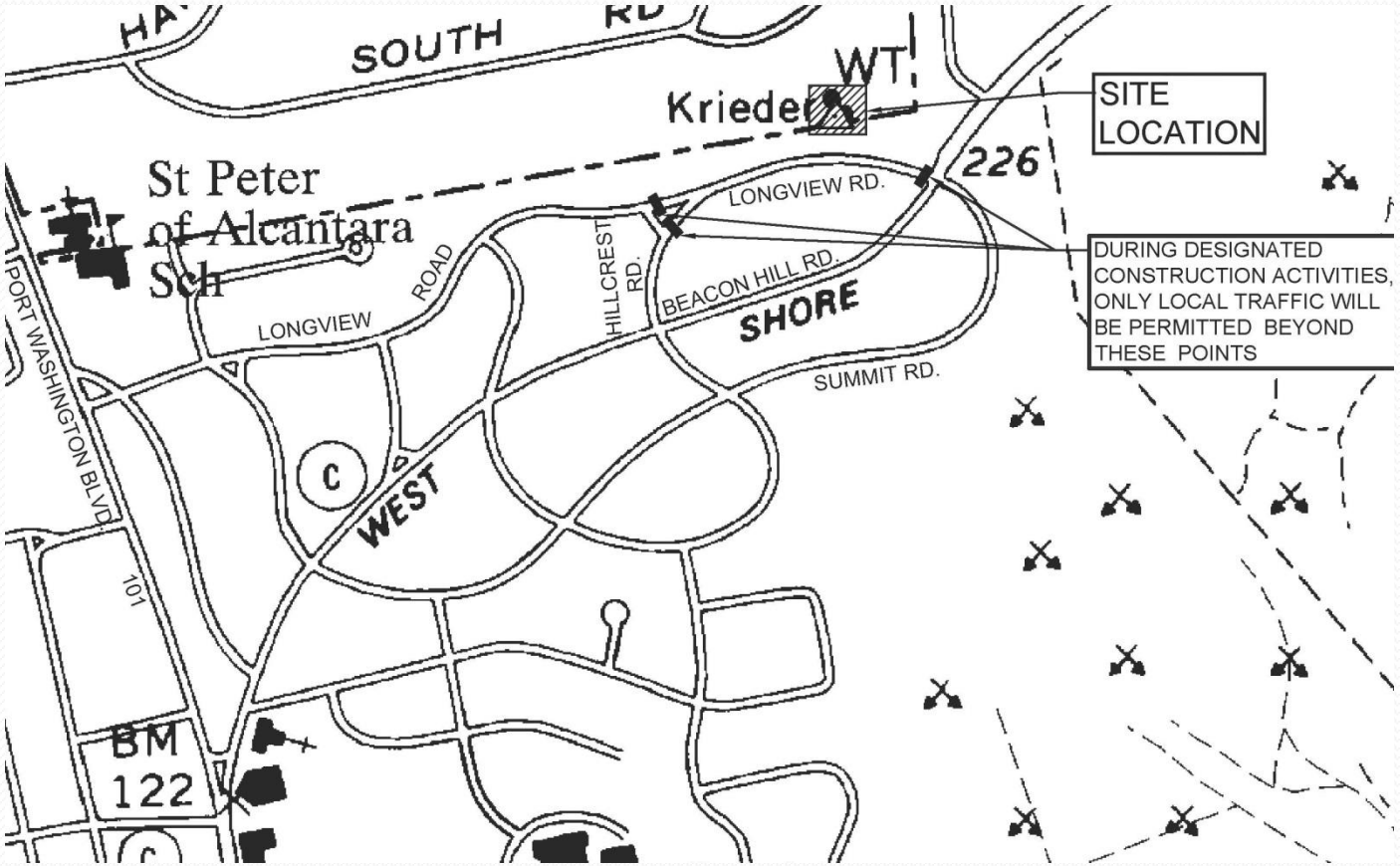
Estimated Construction Impacts

- Duration of on-site work is approximately 10-12 months
  - Overall contract time is 14-16 months

- Estimated Truck Traffic:
  - Demolition – total of 8 trailer trucks and 10 dump trucks within 3-4 weeks
  - Foundation – 15 concrete trucks and 2 dump trucks (all concrete will be delivered to the site on one specified day)
  - Steel Erection – total of 14 trailer trucks and 1 crane within 3 months
  - Site Restoration – total of 10 dump trucks within 2-4 weeks
  - Worker Vehicles – all off site – 2 personnel carriers per day

- These numbers represent ***total truck traffic*** for each stage of construction. There will be no more than three trucks at the work site at any given time

Road Closures



Community Outreach

- To ensure community residents are informed of our plans to improve the Beacon Hill water tower, we have held meetings to discuss our options with:
  - Local elected officials in our area
  - Civic associations and surrounding neighbors
  - Community residents

Our Pledge to the Community

- We will always be available to discuss any portion of this project with you.
- You will have access to a point person before, during and after construction.
- Any resident with special needs affected by construction or road closures is encouraged to reach out to us so we can appropriately address their needs/concerns.
- The site's current landscaping will be fully restored and even improved upon to better blend-in with the natural beauty of this charming neighborhood.
- We will work to do whatever we can to make this project as convenient and seamless as possible.

Questions?

- We are happy to answer any questions you may have at this time.

- If additional questions come up after you leave today, please contact us at:
  - Telephone – (516) 767-0171
  - Email - info@pwwd.org