Summary of Water Tank Site Visit
Select Board
Wednesday, June 7, 2023
Site: Cat Rock
Site Visit Start: 2 p.m.
***This is an informational meeting only no deliberation took place**

Select Board Members; Chair Laurie Bent, Christopher Houston and Thomas Palmer along with Wright-Pierce Engineering Firm met at the location of Cat Rock. There were approximately 32 people who attended this informational site walk meeting. Below is a summary of the Cat Rock site visit, and the proposed tank site plan.

Background

- The existing tank is a 846,000 gallon welded steel tank, constructed in 1946, is 40 feet high, 60 feet in diameter, with ground elevation of +/-327 feet and overflow elevation of +/-367 feet.
- The existing tanks were constructed at the ideal locations as they are the highest elevations in town.
- The proposed tank site as shown by the stakes is adjacent to the access road. Refer to Attachment 1 – Preliminary Tank Site Plan. Alternative #1 was shown during the 6/7/2023 site walk and alternative site locations were identified based on discussions with residents. The Preliminary Tank Site Plan is intended to facilitate discussions with residents and committees. Details of tank construction will be finalized during the design phase.
- Proposed design includes a 0.75 to 1 million gallon (MG), approximately 74-foot diameter composite elevated tank, increasing overflow elevation from 367.5 feet to 397.5 – 407.5 feet (to be determined in design), and increasing height from 49 feet to 80-90 feet (height depends on ground elevation).

Key Issues

- The elevation of the existing tanks is too low to provide adequate pressure and fire protection to 300-400 homes in Weston due to development at elevations higher than the system was designed to serve. The new tanks will need to be constructed to a higher elevation to provide adequate pressure and firefighting capacity in accordance with regulatory requirements.
- Water age in Weston's water system must be managed to avoid water quality issues. An elevated tank is recommended at this location to reduce dead storage volume.
- At least 2 of the 3 tanks in Weston's system must remain online at all times during construction to maintain water service to the community.

Site Constraints

Engineering

- The existing parcel is too small to construct a new tank in same location as the existing tank while maintaining operations.
- The site has a significant amount of ledge based on visual observations and will necessitate blasting and filling to construct a tank foundation. It is likely that fill was brought into the site to construct the original tank.
- Construction of a composite elevated storage tank requires a flat laydown area around the tank pedestal for concrete work and building the steel tank.
- Sizing for the proposed additional 0.5M gal (spread amongst all 3 tanks) of storage for emergency use (another foot or two of diameter of the water tank) would add on the order of 1-2% to cost.

- Once a tank location is agreed upon, geotechnical borings will be completed to determine soil and ledge conditions.
- Access to the old tank must be maintained to allow for its demolition.

Topographic

- The site increases gradually in grade from front to back where grade increases significantly with steep grades and ledge outcroppings. Topography falls off significantly to the east.

Conservation

- The existing parcel is surrounded to the north by land preserved under Article 97 as Protected Open Space. The existing parcel is surrounded to the east, south, and west by residential homes.
- Taking of Article 97 land must be approved by MEPA which requires an alternatives analysis demonstrating that this option results in the least impact to protected land.
- The location of the new tank must be determined prior to continuing with the MEPA permitting process.
- The high point of Cat Rock should be preserved.
- The new tank, 25-to-30-foot buffer around the tank, and the access road will remain cleared for the future. The rest of the site, which is initially cleared for construction laydown, can be reforested.
- The existing tank site should be protected for future water supply use.
- Hiking trails can be relocated per Conservation Commission.

Aesthetic

- The vegetative buffer from the Bradford Road cul-de-sac to the back of the site between the new tank and 111 Bradford Road must be removed for construction. This buffer can be reforested after completion of construction.
- The same antennas on top of the existing tank will be transferred to the new tank.
- Site fencing is required around the tank for security.

Resident Input

- All attendees were asked to sign-in. Town Manager, DPW, Conservation Commission, Tree Advisory Group, Planning Board, Town Engineer, Select Board, and Wright-Pierce in attendance.
- Neighbor noted that the top of Kings Grant is a problematic area with low water pressure. Their question was would this be fixed as part of the project. WP indicated that yes, low pressure issues would be resolved for that area.
- WP indicated that the top of Cat Rock was not considered for the new tank as the Town does not want to touch the top of Cat Rock, since it would lose a pristine/important feature of the Town. Nearly everyone in attendance strongly agreed with that sentiment.
- Town asked what would be the increase in price to build the tank in the valley below Cat Rock? WP estimated that it would be on the order of double to triple the cost, +$5 to $10 million.
- WP noted that after the project is complete, as much vegetation as possible will be restored.
- Neighbor asked if there is any other land that can be used that the Town doesn't own? WP commented that no sites were identified and this approach would not be cost effective or practical. The tanks were constructed at the ideal locations because they are the highest points in town.
- Planning Board asked if the Bradford Road cul-de-sac could be used for laydown/construction of tank to help reduce tree clearing? WP indicated that material storage, field trailers, and parking can

be located on Bradford Road but construction staging will need to be located closer to the tank location.

- Neighbor commented that Cat Rock was previously identified as a good cell tower site. Will there be any on the new tank? Town commented that tanks will be designed to accommodate cell antennas but it is up to the Town what utilities other than needed communications for the water system will be sited at the tank site.
- Question asked as to what is minimum fence required? WP replied that fencing will be located approximately 20-30 feet off the bowl diameter in order to access and perform maintenance on the tank.
- Question asked how long will it take to get the tank online? WP indicated at least 2 years for permitting/design. Tank construction 1-2 years. Won't start construction until spring of 2025.
- WP provided an overview of construction process.
- Neighbor asked if construction vehicles will destroy the Bradford Road pavement (it was just recently paved)? Town said that any damage to the road will be restored.
- Neighbor asked why not install pumps in homes? WP noted that it is not practical because 300-400 homes are involved and they would still not have sufficient pressure/flow at many fire hydrants. Town added that if there's a break, people with pumps lose water. They typically don't know they have pumps and don't maintain them.
- Planning Board stated that some houses will have too high pressure. Town and WP noted that we know exactly where those areas are. The design intent is to install pressure-reducing valves (PRVs) in the system, not in homes. PRVs would also protect pipe system.
- It was noted that Weston has excessive water use and if reduced, would it reduce storage requirements. WP stated that there is a component of that in the calculated storage volume but fire protection is much greater percentage of volume.

Planning Board asked about reducing the size of the tanks if redundancy piping to the MWRA was completed. WP reviewed what was stated in the Master Plan, that there is the potential to reduce emergency storage volume by 0.5M gallons if there are redundant feeds from MWRA. However, it was not a recommendation or definitive action. The decision whether or not to include emergency storage in the project is to be determined by the Town.

- By eliminating the emergency volume, it would reduce tank diameter by perhaps 1 or 2 feet.
  - Planning Board noted that they did not want a lot of contingencies/conservatism built into the tank design.
  - WP added that a slightly smaller tank would mean less material cost but labor and equipment would be the same. A 20% reduction in volume does not equate to a 20% cost savings. Most of the cost is in labor and equipment, the savings would be in concrete, steel, and rebar. Savings more in line with 2%.
  - WP added that the pumps are designed to pump to the highest point. The width of the tank does not affect pressure at all.
- Neighbor asked if the tanks are being designed for increase in population? WP replied that Weston is mostly built out, but a population growth estimate was included in the 20-yr water demand projection.
- Neighbor asked if a tank color been selected? WP commented that no not yet, but color is a community decision.

- Neighbor asked if there will there be warning lights for planes because of nearby airports. WP indicated that they will coordinate with FAA during design. Warning lights are usually unobtrusive.
- Neighbors are concerned with losing the view at the top of Cat Rock.
- Neighbor suggested moving the tank off to the side of the top. WP indicated that this alternative would require a lot of fill.
- Neighbor commented that siting the tank at the higher elevation would save money on a shorter tank to offset the cost of the fill required. WP will review this alternative in the alternatives analysis.
- Neighbor commented that the project needs to maintain view of Cat Rock.
- Neighbor asked that the project also consider trail walking aesthetics. Conservation Commission indicated that trails are not a protected resource, "we change trails all the time", and where appropriate, trails will be replicated.
- Town concluded that the team will look at alternative sites with knowledge of impacting other neighbors and cost implications.

Action Item Summary

Task	Owner
Develop costs for landscaping and consider planting ahead of time to provide vegetative buffer before construction begins.	Town of Weston – Conservation Commission and Planning Board
Develop alternatives analysis including cost estimate for various siting options including further up the hill, at the base of the hill, or behind the existing tank. See Attachment 1 for Alternative sites that will be assessed.	WP

See Cat Rock Preliminary Water Tank Site Map Attached

Meeting ended at 3:00 p.m.

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Tom Palmer
Clerk

Note: A copy of all documents, explanatory material, and exhibits presented to and used by the Select Board as part of this meeting are attached to the approved minutes