

January 2018 Water Tank Project Update

Introduction:

In the past months I have provided several status updates on the effort to replace the Village's failing water storage tank. It became clear following a review of the April 2017, proposed in-kind (stand tank) replacement proposal from H2M Engineering, that a less costly hydropneumatic tank system might be practical. As a result, we asked J.R. Holzmacher Engineering to conduct a study to evaluate the Village's water requirements and determine whether a hydropneumatic tank system is feasible and what it would cost. We now have the data necessary to decide which system will best serve the needs of the Village.

The purpose of this update is to review the features and costs of both systems in preparation of a public discussion on January 20th. The cost for replacing the Village's water storage system is significant and will negatively impact your property taxes, so I encourage you to understand and consider the options available to us. Your input is valued and encouraged. If you cannot attend the Trustee meeting on January 20th, and have questions or comments, please call or email me and I will make sure that you get answers, and that your thoughts are included in the discussion.

Background:

A 2010 study of our water system by H2M Engineers concluded that the storage tank did not comply with current regulations, posed potential sanitary and health risks, and must be repaired or replaced. Every year beginning in 2011, The Suffolk County Department of Health Services has formally notified the Village of "multiple significant deficiencies in the public water supply system that present potential public health hazards." In November 2016, the DHS threatened a hearing and/or fines if the Village did not respond with a plan to correct the enumerated deficiencies.

Early (about 2012) estimates of the cost for replacing the tank were approximately \$200,000. The system cost as proposed by H2M in April 2017, is \$738,000. This discrepancy along with concerns voiced by residents lead the board to explore alternative, less costly solutions. One possible alternative was to decommission the municipal water system and install individual wells, as is the practice on most of Shelter Island. Decommissioning the public water system would require the approval of The County Department of Health Services. The DHS made it clear that such approval would not be given.

A viable alternative to replacing the existing stand tank as determined by J.R. Holzmacher Engineers in November 2017, is to replace the stand tank with two hydropneumatic tanks, which, unlike the exposed stand tank, are underground storage vessels. The cost for the hydropneumatic system is estimated to be \$408,000.

The Village has been approved for \$600,000 of preferential funding from N.Y. State for the replacement of the stand tank. It consists a \$125,000 grant and a \$475,000 zero interest loan. The State will provide additional funds as necessary, but at market rates. These funds can only be applied to the stand tank replacement. The hydropneumatic tank system would have to be funded by bonds issued by the Village. Following is a listing of the principal pro's and con's for each system and a comparison of the costs.

Stand Tank Replacement:

A new stand tank would be erected adjacent to the existing tank and when complete and operational, the existing tank would be removed. The new tank would be exactly the same height of the existing tank, but slightly larger in diameter – 20 feet vs. 18 feet. Aesthetically, it would be marginally less offensive than the current tank, as it will be new and coated so that it will never rust, but it will be as visible as the existing tank.

Pro's	Con's
<ol style="list-style-type: none">1. The tank is an in kind replacement.2. Hap has experience operating this system.3. It is fully engineered and all necessary approvals, permits, and financing commitments are in place.4. Construction could begin immediately.5. The tank may continue to satisfy existing ISO fire ratings*.6. It is a higher capacity system than the hydropneumatic system.7. It is possible that the new tank would be operational by summer.8. Because this is a gravity system, it will supply water temporarily in the event of a power failure.9. Expected life of 100 years.10. Very little required maintenance.	<ol style="list-style-type: none">1. The tank is aesthetically unappealing.2. Expensive.3. The pressure in the system is a function of the height of the tank and cannot be adjusted without significant alteration and expense.

Hydropneumatic Tank System:

A hydropneumatic tank system consists of one or more large tanks that are buried underground. The system specified by J.R. Holzmacher consists of two 6,000 gallon tanks. If additional capacity is required in the future, an additional tank(s) can be added. Air compressors provide pressure in a hydropneumatic system and the pressure is adjustable.

Pro's	Con's
<ol style="list-style-type: none">1. Significant aesthetic improvement:<ol style="list-style-type: none">a. The hydropneumatic storage tanks would not be visible.b. The old tank would be removed.2. Pressure in the system is fully adjustable.3. Substantially less expensive.4. Very little required maintenance.5. Expected life of 50 years except for compressors, which is about 10 years.6. Challenging, but possible to have the system operational by summer.	<ol style="list-style-type: none">1. Cannot satisfy capacity and flow requirements for existing ISO fire ratings*.2. Hap does not have operational experience with this system.3. The system would have to be engineered, put out for bid, and get Health Department approvals.4. Would not qualify for advantageous N.Y. State funding.5. Unlikely, but possible that grant funds (about \$80k) would have to be repaid to the State.

* ISO Fire Ratings. The Insurance Services Organization is a for profit organization that provides certain risk assessments used by insurance providers to determine homeowner policy premiums. Fire suppression ratings range from 1 to 10 - 1 is best, 10 is worst. Dering Harbor has a 5 rating, which is a very good rating. While the hydropneumatic tank system would be fully capable of delivering domestic water for the Village, it would not have the capacity to deliver the water flow and duration to the fire hydrants necessary to sustain the 5 rating. The rating could increase which could add to homeowner policy premiums.

Cost Comparison:

The tables below contain estimates of the costs for each proposal. Please note that the numbers in the tables are close approximations and are subject to change. The consideration likely to be of most interest to residents is the impact to their property taxes. The column furthest to the right is the estimated percentage increase in property taxes necessary to fund the project. The funding advantages offered by the State provide a significant cost advantage for the stand-tank project.

HYDROPNEUMATIC TANK PROPOSAL

ESTIMATED DEBT SERVICE SUMMARY						
\$400,000 SERIAL BONDS						
Prepared by: Munistat Services, Inc.						
Term (Years)	Interest Rate	Estimated Avg Annual Debt Service	Estimated Total Debt Service	Debt Expense as % of Project Cost**	Estimated % Property Tax Increase*	
10	2.50%	45,763	457,625	114%	13.87%	
10	3.00%	46,915	469,150	117%	14.22%	
20	3.50%	28,085	561,700	140%	8.51%	
20	4.00%	29,310	586,200	147%	8.88%	
30	5.00%	26,267	788,000	197%	7.96%	
30	5.50%	27,413	822,400	206%	8.31%	

STAND-TANK PROPOSAL

ESTIMATED DEBT SERVICE SUMMARY						
1	\$125,000 GRANT					
2	\$475,000 ZERO INTEREST LOAN					
3	\$140,000 MARKET RATE LOAN					
Term (Years)	Interest Rate	Estimated Avg Annual Debt Service	Estimated Total Debt Service	Debt Expense as % of Project Cost***	Estimated % Property Tax Increase*	
1 - GRANT	NA	NA	-	0.00%	0.00%	
2 - LOAN	30	ZERO	15,833	475,000	64.19%	4.80%
3 - LOAN	30	3.50%	7,706	223,501	30.20%	2.34%
TOTAL			23,539	698,501	94.39%	7.13%

*\$330,000 Estimated Annual Village Budget

** \$400,000 - Estimated total hydropneumatic tank project cost

*** \$740,000 - Estimated total stand-tank project cost

Conclusion:

The Village must replace the existing water storage tank. It is beyond repair, it is failing, and we are on notice from the Department of Health of significant deficiencies that must be corrected. What is before us is to make the decision on which alternative to choose. We have spent considerable time exploring the alternatives and now have the information necessary to make an informed decision. That decision should be made at the Trustees meeting on January 20th, so that we can begin the replacement process.