TOWN OF BEEKMAN

DOVER RIDGE WATER AND SEWER SYSTEMS

Overview and Recommendations

WATER SYSTEM

Water System Background

- Central water system constructed in 1960's as part of the subdivision. Only 67 lots were developed.
- System privately owned until 1997 when the Town was required to take ownership after previous owner abandoned the system.
- Improvements have been made over the years such as an additional well and existing well rehabilitation.

Water System Background (con't)

- Changing regulations requires higher levels of water treatment.
- Dutchess County Water and Wastewater Authority (DCWWA) evaluated the system in 2010 – numerous recommendations were made, and discussions of takeover were held, but improvement costs were prohibitive.
- Operators of the system made adjustments to help the system meet water quality regulations.
- The Health Department continues discussions with the Town as to the resolution of the water system issues noted in their last Inspection. The DOH will pursue until all corrective measures have been taken.

Water System Background (con't)

- The Town asked Morris Associates to review the DCWWA report and prepare an updated list of recommendations, taking into account the DCWWA recommended improvements as well as issues which arose since the DCWWA report in 2010; the Town requested this review in an effort to reduce the overall costs.

Water System Revised Recommendations

- The recommended improvements were prioritized into Stages.
- Based on operator adjustments and apparent lower radionuclide concentrations, treatment for these compounds may no longer be necessary, this could save considerable costs in the short term. Long term costs are not known as these levels could increase in the future.
- The Dutchess County Department of Health must approve any changes to a Public water supply. The recommendations herein assume that this will occur.
- Note; with the exception of changing groundwater conditions (quality & quantity), as these are outside anyone's control, the recommendations are as follows:

Stage 1 Recommendations

- Replacement of the old (45+ years) leaking water storage tank is required. Replacement with a plastic, NSF approved tank is determined to be best option to prevent the need for future replacement within the next 50 years of normal operation. Tank will be slightly larger than the existing tank, which in addition to well improvements should avoid the need for a new well.
- Existing hydropneumatic (pressure) tank is also in need of replacement due to age (45+ years) and poor condition. Replacement with a variable frequency drive (VFD) pump system would save considerable costs over a replacement-in-kind of the pressure tank.

Stage 1 Recommendations (con't)

- Redevelop existing wells to increase output, and improve casings and seals as necessary to meet current sanitary codes, as per DOH requirements.
- Adding a generator to the system is required by code, and will allow for an uninterrupted supply of water during outages (such as during Hurricane Sandy), adequate fuel must be present.

Stage 2 Recommendations

- The following are recommended to be installed in conjunction with Stage 1 improvements:
- Install water meters for each house which will aid in conserving water, which in turn saves costs to homeowners on future improvements such as the potential for smaller water treatment units.
- Second and perhaps more important, meters will allow for identification of water main leaks that may presently go unnoticed, which wastes power and chemicals, keeps apparent demand high, and denies the Town to be proactive in finding and repairing leaks before loss of pressure occurs. This recommendation will include a central meter installed at the water plant.

Stage 3 Recommendations

- Stage 3 improvements center around increased security of the water system and other protective items to prolong the life of piping and system equipment and these should be installed in conjunction with Stages 1 & 2:
- Vehicle and personnel gates, lighting and fencing.
- Pipe and equipment coatings.
- Radionuclide treatment system.

Costs

- Owners are responsible for both capital and operation and maintenance (O & M) costs. This is typical for any municipal system we are aware of in Dutchess County.
- Generally, customers of a water system pay for capital improvements as shown on their tax bills as a separate line item, while quarterly water bills cover operational (O & M) costs.
- One of the main goals in any project improvement is to minimize these costs. The Town researched whether any low interest loans or grant funding is available. None were found at this time.

Costs (con't)

- Improvement costs in the DCWWA June 2010 Water report totaled nearly $2,300,000. These costs have been reduced in the Morris Associates report to a total of about $670,000; a savings of nearly 70%. One of the main cost savings comes from the fact that a new well is not necessary at this time.

- When immediate improvements are needed, such as this case, any lack of grants or low interest funding opportunities is not accepted by a regulatory agency as a valid reason to delay. It should be stressed that the recommended improvements are mandatory at this point in time. These improvements are necessary to meet Sanitary Code and to protect public health and safety.

SEWER SYSTEM

Sewer System Background

- Similar to Water, the 1960's Sewer system was privately owned until the Town was required to take possession in the late 90's.
- Upgrades and repairs were made over the years, most recently in 2007; however these upgrades have not prevented or mitigated issues as noted in the Inflow and Infiltration (I&I) Report dated September 2, 2005 and the DCWWA system report dated June 4, 2010.
- The Town requested Morris Associates to investigate and prepare an updated recommendations list in an effort to reduce costs.

Revised Recommendations

- As with water, recommendations are prioritized.
- The Dutchess County Department of Health and/or Department of Environmental Conservation (NYSDEC) must approve any changes to a public sewer system. The recommendations herein assume this will occur.
- It should also be noted that any connected sump pumps, or roof drains, or footing drains, should all be disconnected from the sewer and routed to another location that will not impact either you or neighbors, or roadways.
- Excepting any other changes in regulations or system performance, the revised recommendations are as follows:

Stage 1 Recommendations

- Perform some sewer line relining at the worst sections of the sewer system as well as other steps such as watertight manhole covers to keep groundwater out of the system. This will aid in improving treatment plant performance, keep the system in compliance, decrease the O & M expenses, as well as reducing costs on future upgrades.
- Install backflow prevention on the treatment plant's potable water line to protect the public water supply to the greatest extent possible.
- Perform limited survey work to re-establish system boundaries and easements.

Stage 2 Recommendations

- The following are recommended to be installed in conjunction with Stage 1:
- Perform additional relining of sewer lines, replace misaligned or broken sewer lines, replace sewer manholes which are in the worst condition at locations which are allowing the greatest amounts of groundwater into the system.
- Perform more substantial treatment plant repairs needed to keep the facility in regulatory compliance as well as to keep rainwater and groundwater out of the system. Each gallon of water treated costs money, so to eliminate clean water inflow is a savings to the residents.

Costs

- The Sewer system is similar to the Water, that is, owners are responsible for both the capital and operation and maintenance costs for any system. Again this is typical for the municipal systems in Dutchess County.
- It is characteristic for customers of a sewer system to pay for capital improvements as shown on their tax bills, as a separate line item, while quarterly sewer bills typically cover operational [O&M] costs (there is no inexpensive, reliable method to measure sewer flows from residences, so water consumption is used as the basis).
- Also, as with the proposed water improvements, the goal is to minimize costs through low interest financing and/or grant money; The Town again looked for funds to reduce costs, but none were found at this time.

Costs (con't)

- The Costs for sewer improvements noted in the DCWWA June 2010 report totaled just over $500,000. These costs have been reduced in the Morris Associates report to a total of about $370,000; a savings of approximately 26%.
- The lack of any grants or other such funding opportunities is not grounds to delay needed or in this case mandated improvements. Historically, fines are issued for violating SPDES permits or code compliance violations which will increase the final costs to District residents. With the Town's proactive approach to these proposed improvements this will consequently minimize costs to the residents.

Dover Ridge Estates Water and Sewer Systems Costs Summary

- Water
  - Stage 1: $335,000
  - Stage 2: $70,000
  - Stage 3: $265,000
  - **Phase 1 = $670,000**
- Sewer
  - Stage 1: $190,000
  - Stage 2: $180,000
  - **Phase 1 = $370,000**

- Combined Costs
  - Stage 1: $525,000
  - Stage 2: $250,000
  - Stage 3: $265,000

TOTAL: $1,040,000

SAY $1,100,000.

USER COSTS

Dover Ridge Water & Sewer Existing Debt

District Size: 67 households		
Annual Water Bill @ Current rate:	$	736.44
Annual Sewer Bill @ Current rate:	$	1,153.68
Current Annual Special Assessment (matures in 2036):	$	385.00
Current Annual Household Cost:	**$**	**2,275.12**
District Debt to Town $360,068.00 (assume 0% interest)		
One yr. assessment	$	5,374.15
or		
Five year assessment	$	1,074.82
or		
20 year P/I $480,503.05 (Assumes DCWWA financing)		
Estimted Annual Household Payment	$	358.58

Dover Ridge Water & Sewer Proposed New Debt

Proposed New Bond for Upgrades:	$	1,100,000.00
30 yr. P/I Pay back $1,659,992.50		
Estimated Annual Payment per Household for New Bond	**$**	**825.87**
Revised Current Household Cost after New Debt:	***$***	***3,100.99***

DOVER RIDGE WATER & SEWER

- The Town of Beekman and Town Engineers Morris Associates Thanks you very much for your interest, time and attendance this evening.

- QUESTIONS ?