

**Water Quality Committee
Village of Millbrook
February 28, 2011**

In attendance: Trustee Stanley Morse, Frank Genova, Howard Schuman, Dr. William Augerson, Steve Lynch from R.S. Lynch & Co., Vickie Kelly-speaker and Kayel C. Conklin.

Call to Order-Trustee Morse at 4:38 PM

Pledge of Allegiance-Led by Trustee Morse

Agenda Review-Trustee Morse reviewed the agenda.

Administrative Remarks-Steve Lynch stated that task 1 encompasses the actual physical repair of the sewer lines. The NYS DOS has finally approved the second phase of this task and the Village has applied for an extension but they are not counting on it. He added that the physical work and the study work will be completed by March 31 as approved by the DOS. Lash Contracting is trying to meet this deadline as far as the lining portion of the work. The digging portion of the project will be done later. Task 2 includes the improvements and expansions and he is working with VRI on this task to also identify the project costs. Task 3 is the Comprehensive Plan in a draft language is underway and is becoming a document just for water and sewer. Steve added it is becoming a summary of other tasks and can be revised to be put into the Comprehensive Plan. Task 4 is being worked on by Josh Mackey and this will be the first draft of an inter-municipal agreement needed to implement water and sewer. VRI will be providing the asset management plan. The rate analysis was done on a preliminary basis and they are working on the revisions. Factors outside of the Village are unrelated. Bill stated that the Village is well advised to get the job done. Steve stated that the quality of the job is not being compromised. Trustee Morse added that the Village is thrilled to get the DOS's approval.

“Road Salt: Moving Toward the Solution”-see the attached-**Vickie Kelly** spoke on road salt in our ground water. Road salt is also known as sodium chloride. IES has been collecting water samples since 1985 and they have noticed an increase in the salt content of the Wappingers Creek watershed. They collect samples at low flow once a month. The summer concentrations are higher than in the winter showing the salt content is not entirely snow melt driven. She added that some road salt does permeate the ground and some runs off of impervious surfaces. In the summer there is less water due to less rainfall and the trees are taking in water. They have found that salt is staying in the ground water for perhaps decades.

Vickie stated that there is a lag time between the beginning of salt use and when we see it appear in the ground water. The salt level will plateau but when this takes place cannot be determined. She added that salt can accumulate in ponds and wetlands, thus adding to the time it need to flush out.

Vickie stated the human health effects of sodium if a person has heart issues and on a salt restricted diet is tremendous. Dutchess County did a survey in 2008 of wells. The US EPA says there is a safe drinking water act that states there is a contaminant candidate list. On this list chloride is a secondary standard. Bill stated he has in mind that water softeners which are widely used have iron exchanges to capture calcium and other chemicals.

IES had done a careful assessment of the sodium chloride in streams. They did take into consideration roads in the surrounding areas. The amount of salt per lane mile has not increased according to Dutchess County. In her calculations Vickie assumed every house had a water softener. This helped to determine, along with other sources, the amount of salt in the ground water from roads in percentages. She added that almost all of the salt in our streams is from road salt. In the Village of Millbrook in 2004 the road salt level was 39.9 ml/L, in 2005 it was 20.2 and from 2006 to 2009 there was no data, since the salt levels were not reportable. If concentrations are above 20 ml/L they are reportable. Vickie stated the Village water supply is good.

What can we do to reduce road salt? We can be more efficient and 10 top ways to do this are:

1. **Road Weather Information Systems (RWIS)**-They measure the pavement temperature and conditions are taken from websites so road maintenance crews then can take appropriate actions. This is a cooperative observers network which is made up of citizen volunteers to warn of potentially dangerous conditions to give road maintenance crews vital information.
2. **Calibration of equipment** allows you to measure the exact amount of material you apply. This has helped reduce salt use up to 60%. It is a very simple technique and instructions are available online. $\text{lbs/revolution} \times \text{number of revolutions/minute} = \text{discharge rate in lbs/minute}$ is the usage.
3. **Don't overfill**-20% less salt is used if the exact amount is loaded.
4. **Temperature sensors of pavement** makes a tremendous difference. Knowing the surface temperature is important in determining what steps to take to keep a road clear of ice.
5. **Retrofit trucks with applicator regulators.** A cost benefit analysis was done for the Town of East Fishkill was done giving a return on their investment in the first year of \$103,810. They determined how much less salt they used if they purchased regulators for their trucks and the cost of that salt.
6. **Pre-wet the salt.** A Canadian study revealed that pre-wetting salt before roadway application reduced the amount of salt infiltrating aquifers by 5% since it makes the salt stick to the road better.
7. **Anti-ice**-Creating a layer of brine between the road surface and ice equals a need for 25% less salt.
8. **Reduce the salt content of your sand**-If you are using sand, only use as much salt as you need to keep the sand from freezing. You should use 5% salt and 95% sand for best results.
9. **Alternative deicers**-Target these more expensive alternatives for more vulnerable areas.

10. **Training**-The Village can require drivers to attend regular training or add a salt efficiency module to existing training. They can do the training as part of an inter-municipal agreement. This serves two purposes. One is to understand the steps to reducing salt use and the other is why. This training will require the Village to pay a fee for the speaker. The Cornell Cooperative Extension can assist in the training. Bill stated he is aware of some municipalities ending up in court due to their salt stockpiles migrating and causing contamination. Covering your salt is the key according to Vickie. She added that all governmental agencies are required to cover their salt but private contractors do not have to cover their salt stockpiles.

Frank stated that calibration is the key. He added that they have found variations in spreading since the salt mixes we are using are not uniform.

New WC Task: “Factors Outside the Village”-Trustee Morse-The first phase of data gathering is coming along. Trustee Morse stated the second phase is working on a back up aquifer. He added the third phase will be public education and they have started with a series of newspaper articles. They are making excellent progress according to Trustee Morse. He added that the next best step is to use a hydrologist and bring one on board. New items and challenges equal the paint shop located in Mabbettsville. The role of the Water Committee is to help the Comprehensive Plan to move forward. They also want to study the Village build out. Trustee Morse ended by stating he wants to keep the Water Committee going after the 3 phases are complete with perhaps fewer meetings.

Aquifer Sub-Committee Report-Howard Schuman gave updates from the February 14th meeting. See the attached. The scope of the work for the hydrologist would be to review the existing aquifer mapping and other available mapping. They would identify a maximum of the 3 most promising sites for source development. The 3 sites would be visited to review the field conditions and any potential obstacles. Finally, the hydrologist would provide the Village with the “scope of work” necessary for the actual drilling for well development. The sub-committee has developed questions for the hydrologist as well as background information collected to date. Howard referred to the minutes from the sub-committee meeting where the discussion of the matrix is currently on hold. He ended by stating the future direction of the aquifer committee will depend on funding from the Village.

Kayel submitted a map of hydro-conductivity which a hydrologist may find useful and helpful. This map shows water and rock, clay, silt and sand. The slopes are also included in the information and are available as per Kayel. He stated he cannot develop more information but he can provide what information and maps he has currently. Howard stated there may be an alternate solution available that we have not thought of. Kayel responded to Bill’s question that the information on the maps is based on soil composition map which gives water conductivity.

Trustee Morse asked what the capacity is of the current water tower tank and Kayel answered it equals 500,000 gallons. In a true emergency the tank full would last 1 ½

days. Trustee Morse stated that even with conservation the numbers may be stretched out to 3 days. Kayel offered to clarify at the next meeting. Trustee Morse added that the Village can truck water in at a cost of \$400 per truck load which would equal 8,000 gallons. This is a cost of \$9,300 per day. He added that rationing and using our own water supply may reduce these costs. Bringing online a new water supply will take approximately 2 years. It will take 60 to 90 days to dig the wells. This does not take into account the acquisition of the land. Perhaps the Village can sell the excess water and this can be a revenue source for the Village.

First Report to the Village Board-Trustee Morse stated they plan on March 22 to give a report to the Board on the nature, scope and areas of study, the given data, the subcommittee goals and the aquifers identified to date as well as the need for a hydrologist. Bill stated that selling the water is an option once the Village selects an aquifer. Bill added the Village doesn't want to let slide the concept of a profit center. Trustee Morse stated the options are huge and range from being put on the shelf to making the aquifer available to expansion into the Town of Washington.

Trustee Morse would recommend to the buy land, dig the well, cap it and put in a filtration unit and housing to make it available and tied into the present system in case of an emergency. Bill stated they are not mutually exclusive and they could do the least expensive approach and can go further when finances become available. At this early state, Trustee Morse would recommend the Village acquire the well site land by purchase, lease or eminent domain. Then we should dig the well, cap it, put a small building over it, and install a chlorination unit to the point of making the well operational. Then stop any further work and make the well available on very short notice for pumping and trucking water into the Village for emergency purposes only, The recommendation includes not putting any pipes in the ground between the new well and the Village. He feels the residents are not in favor of any significant development.

Future Meeting Scheduled-Monday, March 21, 2011 at 4:30 PM

Adjourn-The meeting concluded at 6:15 p.m.

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Respectfully Submitted,

Linda T. Wiltse
Village of Millbrook
Clerk/Treasurer