Water Quality Committee
Village of Millbrook
March 21, 2011

In attendance: Trustee Stanley Morse, Frank Genova, Howard Schuman, Dr. William Augerson, Steve Lynch from R.S. Lynch & Co., Emma Rosi-Marshall and Scott Osborne from VRI.

Call to Order-Trustee Morse at 4:28 PM

Trustee Morse presented the following information on poster board with an aquifer map exhibited on an adjacent easel.

Water Committee Report #1 to Village Board of Trustees review
Outgrowth of emergency preparedness project
Recognition of importance and fragility of our water supply
We live in a different world
We have sole sourced out Village water supply for 80 some years now

Briefing #1
Status of Committee work
Need for hydro geologist services
What to do when the back-up aquifer is identified?

Steve Lynch questioned if this is the Committee work versus the work under the grant which is using a different issue? Dr. Bill Augerson suggested another asterisks at the end and use a phrase such as expecting to identify options. He added that this should not be a specific recommendation which will come later down the road. Frank Genova stated that speaking of another source this idea is 45 years old. It is not a recent decision. They need to point that it is a separate and distinct issue and not a new topic.

The Committee members were listed.

Skills
Mayor Hurley
Geology major
Industry manager
Agronomist
Military command
Earth science teacher
Environmentalist
Water management team
PH D water scientist

Work Scope
Data collection
Identify back-up aquifer
Concerns outside Village of Millbrook
Public education

Activities
Monthly meetings
Sub-committee meetings
Field trips
Guest speaker
Consultants VRI and Greg Bolner
Data collection

Data
Handouts will be given to Board of Trustees members

Emergency Scenario
What would we do today if an emergency occurred?

Scott Osborne stated that a lot will depend upon the type of emergency that occurs. They will need to isolate the distribution system from the source with a check valve. Emma Rosi-Marshall asked if the Village ever did a trial emergency to check the valves. Scott answered that first they must identify the problem. They must notify the Health Dept. and the public second. Then they must get professionals involved such as engineers.

Bill recommended that the Village must have an early history of the Village water supply to open the presentation. This will set the stage of the legacy of the Village water supply. Trustee Morse stated the Village had a major fire where 10 buildings were lost and thus began the need for a Village water supply in 1916. The Village had no real water supply at the time. It took 16 years to approve and install the current water system. Frank added that historically the development in Mabbettsville necessitates the need for another water system.

Scott stated the current water system is a shallow water collection system. It is only 12 feet deep with 7 collection points that will collect quickly. From the collection point to the tank the water moves very quickly and there is no shut off valve. Bill added that from this there are very great consequences. Steve stated first there are some short, medium and long term responses. Scott added that as of right now there is no way to fill the Village water tank from another source other than the collection system. Emma stated that currently there is no plan in place to deal with a water emergency. Bill informed the Committee that plans are in place to decrease the Village resident's exposure to a contamination. A long term plan would be very difficult and expensive. Emma informed the Committee that if the water system had a non-persistent contaminant, it may clear through the distribution system quickly. Frank stated the method of use in the Village is

equal to the demand is complex such as the nursing home. Examples of these are spelled out in the Bennett development application.

Trustee Morse asked what if the Mabbettsville water supply goes off line. Scott answered they must isolate the distribution system from the water source. Scott informed the Committee that those at lower levels in elevation in the Village will be the last to run out of water and those at higher elevations will run out of water first. He added that if caught in time they can isolate the water at the water plant and then they would be able to use the water located in the water tower. Scott also stated they can then truck water in from a company in Brewster which chlorinates the water and VRI has a working relationship with this company. Bill added that this is very scenario dependent such as in other emergencies where the function of the system would be compromised if a large scale event occurred. One example is a power outage for a long period of time. Bill stated it is doable but not easy for a long period of time and it becomes extraordinarily expensive and difficult to manage.

Howard stated that actually there is no plan the Village intends to follow. Frank added that based on the needs today the Village needs another system. Bill stated he thinks a plan needs to be more formalized and must meet the basic survival needs which would not be overly difficult but would be expensive. They must portray as a working plan to deal with a spill but must be detailed allowing it to be more rapidly implemented.

Possible threats to our Village water system
Scope of threats
Contamination
Influx of people
Earthquake
Power outage
Storms & hurricanes
Tornados
A "911" event
Fluctuation in precipitation rates
Nuclear evacuation 50 mile radius which we are just outside of

What to do with a back-up aquifer?
Village board options

Emma suggested that this is a big jump in topic. Bill recommended that perhaps Trustee Morse should state that at the end of the day there are various threats to our one system and if anything happens to this system we are in a lot of trouble. There has been earlier interest in looking at alternate water sources. Emma added that this is a logical transition from threats of contamination or not enough water for our residents. Do we have the capacity to supply more people with water? Trustee Morse answered our current water system can handle 1/3 more of influx of people. Emma stated that if we deal with both problems at once, the back-up water source is the answer for one. Bill added that to the Trustees this would be an abrupt transition. Frank stated that this shows a definite casual

need for water now. Emma asked that if in the summer does the Village run out of water. Howard answered that the Village water source is adequate but the system is strained at times. Bill added that the recent fire made a major water excursion and a fire during a drought would be one scenario. Trustee Morse responded that he will add local reasons why we need an alternate water source and enduring issues. Steve suggested that the Committee should not create the impression that we do not have a sufficient water supply. Bill added that the Japanese have had more than one event happening in sequence which required exceptional measures.

Howard gave the Sub-committee report

Aquifer sub-committee
Members include Howard Schuman, Frank Genova, Scott Tumblety and Emma Rosi-Marshall

Identifying a back-up aquifer
Definitions
Aquifer maps
An Aquifer is a basin filled with stone, then filled up with water and you could use a straw to draw water out or you can have rocks with cracks in it and the rock must be drilled out to access the water. Emma explained soluble versus non-soluble materials will depend upon how quickly it will go through the water supply. Bill questioned the flow times and how to go about determining enough flow has taken place or is needed to move through the water supply.

Activities
Monthly meetings
GIS mapping
9 water locations
8 potential back-ups
Cost elements

Howard stated the most probable spills are most likely to be the ones to go through the water supply quickly. Zone 2 has deeper aquifers that are less likely to be affected by contamination. Zone 3 exhibits examples of streams that can recharge aquifers. A hydro geologist will help to locate exact spots for an aquifer. Howard added that everything here is preliminary. He will explain the chart to the Village Board by listing the 9 aquifers and the costs to lay pipe to connect from an aquifer to a designated location. Howard added that the further you go the higher the costs. Bill suggested the lead in conversation perhaps would be to tell the Board knowing where an aquifer is has no bearing on the possible production the aquifer can provide. The sub-committee started to work on a matrix of 9 aquifers, pipe, a pumping house and pump costs hat all go up the further from the Village you get.

Howard informed the Committee that hydro geologist costs are not included in these figures as well as acquiring the land the aquifer sits on. Since we would be using

taxpayer money the Committee must be very sure of their recommendations. The sub-committee stopped the completion of the matrix due to these issues. VRI used a cost analysis for their matrix. They used quantity which equals size and quality and they set a value to each. For a larger matrix they needed more information than they could supply without a professional's input. The matrix will change when they get more information. Steve asked about quality. Frank stated that potability and hardness are examples of quality and Howard agreed. Bill stated about the large purple areas on the map may be confusing to Board members. Russell Urban Mead, a hydro geologist was recommended by Frank and Howard. Frank gave an example of selling the Board on the issue and not answering the questions the Board may have. Emma stated that maybe there isn't going to be a perfect aquifer since there will be multiple scenarios and situations. Bill stated this will give the Board information and choices. Howard ended by stating there are different options and priorities for different aquifers.

Best back-up criteria
Zone 1 areas
Potential costs
Volumes of water
Recharge rates Emma compared a big bucket with the recharge a drip versus a small bucket with voluminous flows for recharge
Hydrology study

To Do
Acquire hydro geologist services
Pick sites for study
Determine water quantities
Determine recharge rates
Make back-up selection

Trustee Morse took over the presentation at this point

Village board options
A range of activity
"Least to Most"
How far to go?
Key criterion: Money!

Options
Least: put study on shelf
Most: second fully operational aquifer

Steps
Finish study
Install "station"
Pick back-up
Study land connection

Select a site
Select contractor
Acquire access
Sink a well
Connect system
Implement system

Committee: next steps
Complete hydrology study
Reports to the Board of Trustees
Follow directions of the Board of Trustees
Comprehensive plan

Emma suggested that Trustee Morse point out #1 on the aquifer map is where the Village gets its water supply currently

Future Meeting Scheduled-TBA after the Board of Trustees decides how to proceed

Adjourn-The meeting concluded at 5:51 p.m.

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Respectfully Submitted,

Linda T. Wiltse
Village of Millbrook
Clerk/Treasurer