VILLAGE OF SKANEATELES
MUNICIPAL BOARD
MINUTES OF REGULAR MEETING – March 27, 2013

Present: Chairman Peter Moffa, Commissioners Blackler, and Hall. Mayor Hubbard. Village Trustees Angelillo, Jones, Lanning and Sennett. Village Attorney Byrne. DMO Lotkowictz, CEO D'Amico, SFD Leaders Jim Buff and Dick Perkins. Kevin Castro and Nick Hyde of GHD, the Village's engineers.

Absent: Commissioner Blackwell.

Minutes: On motion of Comm. Hall, seconded by Comm. Blackler, the minutes from the meeting of February 27, 2012 were approved unanimously by the members present as corrected.

Chairman Moffa called the meeting to order at 7:05 pm.

AMR – DMO Lotkowictz reported that crews have begun installing meters again. So far this month (through the 18th) 31 water meters and 14 electric meters have been finished. Also this month all district meters are installed and are on AMR. So everything leaving the Village is now on an AMR meter with the ability to read flows remotely. There is an upcoming meeting with the Town to address their concerns regarding the volumes of water being billed. In District #2, out Onondaga Street to Fisher Road, there appears to be some 30 gallons/minute being used during the early morning hours, which may suggest a leak.

Community Center – DMO Lotkowictz reported that he and Chairman Moffa had met with Community Center personnel last week to look at potential energy conservation projects that could reduce the demand on power from the Village. If the Community Center undertakes these projects while still on National Grid, they would be in a position to use the system benefit charge to qualify for NYSERDA grant funding. LED lighting is one area that they could immediately pursue, with geothermal assistance to heating and cooling as another option. Chairman Moffa indicated that any big expenditures at the Community Center will be dependent on their conducting a capital campaign for funding, which may be as much as two years off.

URD Serv.-Fennell/Jordan Streets Design - DMO Lotkowictz reported that there is no particular update on the overall project. For the new Village Office, we will be installing an underground connection from the east side of the property from a new transformer to be installed in that area.

Master Plan of Village Electric System – Chairman Moffa and DMO Lotkowictz, recognizing the importance of timely completion of this work, will be engaging CHA to assist in the push to final completion.

Ephesus Technologies Demo of LED Street Lighting – A second light has been installed on the south side of Genesee Street, in front of Thayer Park. LED output is a truer reflection of natural light and thus may appear to be brighter even though the electrical output is substantially less. There are four additional units that may be installed. Comm. Hall suggested that we get on with the trial. Chairman Moffa agrees. SFD President Buff advanced the suggestion to install additional units across the street from the two already in service so that compliance with DOT lighting standards can be measured.

Tallcot Lane Water Line – DMO Lotkowictz reported that now that the necessary easements have been obtained, he can proceed to schedule the work to replace the water line.

Victory Sports Complex – DMO Lotkowictz reported that the revision to a positive declaration under SEQRA will require a full-blown Environmental Impact Statement. The next step is a scoping session to determine all the impacts that will be considered.

Water System Asset Management Plan and Study – Chairman Moffa reported that the Plan and Study has been essentially completed and introduced the representatives from GHD, the Village's engineers who oversaw the conduct of this work, to present their findings. Mr. Castro described the work as a hydraulic modeling and mapping effort for the water distribution system, with a large focus on the fire protection capability of the system. In a small system, the demands of domestic customers tend to be a lot smaller than the rate demanded for fire protection – which drives the size of the pipes needed to deliver fire flow.

Mr. Castro showed a map, "one of our key deliverables for the project"; a Geographic Information System (GIS) map showing all the buried assets within the water system. So now all the valves and hydrants are physically located within the distribution system and recorded in a database. They also identified the sizes and ages of components of the system. These data were then merged into the modeling software for analysis of the system.

The Village has a 2 million gallon booster pump that draws out of the City of Syracuse wet wells. That facility has UV disinfection and chlorination. It pumps through a dedicated 12 inch water main up to the tank sites. That main was not connected to the distribution system in order to have the required chlorine contact time to meet the filtration avoidance conditions. Those contact time requirements have since reduced very dramatically, so we can take advantage of that water main and its capacity for delivering flows into the system. At the tank site it pumps through the 540,000 gallon chlorine contact tank, then flows over to the 250,000 gallon elevated tank. At that point the water begins to serve the customers. The booster pump does not supply the demand directly, the pumping just replaces the water drawn out of the storage tanks.

That design exacerbates some of the issues seen with fire flows, because the water has to travel long distances and find its way through smaller mains in order to be delivered to the demand areas. This results in energy loss and not a lot of capacity to fight a fire. The distribution system consists primarily of 8 inch, 6 inch and 4 inch unlined cast iron from many years ago, and a fair amount of newer 8 inch ductile iron pipe. That newer pipe is lined and does not corrode as much.

The system uses about 650,000 gallons/day on an average day and 1.1 million gallons/day on a max day. About half of the water is used by the Village and an equivalent amount by the Town. There are 6 Town connections.

Once the model was prepared with the factual inputs, it required calibration to be sure that it can actually predict conditions in the system. The team collected field data on flows and pressures in the distribution system and then made sure that the model could predict those conditions. After calibrating the model, it became useful for assessing the performance of the system and determining its capacities. One process looked at various locations within the distribution system by applying hydrant flows, and increasing the flow rate until the point where some location within the system dropped below 20 psi pressure. That is the Department of Health standard. By doing so, GHD was able to produce available fire flow data. The locations were those chosen by the Insurance Services Office some years ago when they rated the Village system and the Fire Department. They prepared recommendations for fire flow at each location based on assessing the types of construction present. With the present conditions within the water system, none of the locations were able to reach the needed fire flow recommendation. Trustee Angelillo asked how many other Villages reach the standard? Mr. Castro answered that in his 25 years of doing similar work, he has never seen a system that was fully compliant.

In response to Attorney Byrne's questions, Mr. Castro explained that the results have gotten worse, because the pump no longer supplies fire flow; the pressure and volume comes from the tank. While any particular hydrant can probably flow significantly more water than is indicated in the results; someone in the system will likely be below regulatory standards when you do. While the flow is somewhat dependent upon elevation, it is more an issue of capacity of water mains – their condition and their size.

Mr. Castro stated that the original design made provision for the ability to bypass the transmission main and to pump directly into the distribution system. But, if that option is used, a boil-water advisory will be required. He went on to explain that the previous numbers were produced under peak demand conditions. Under average conditions, the pressures within the system are adequate with pressures above 35 psi in all sections of the system, another Health Department standard that needs to be met. The pressures on the east side of the system are lower than in other areas. During peak hour on maximum day, pressures in that eastern portion start to drop below the 35 psi level, but remain above 20 psi.

Mr. Hyde explained the process by which the model was used to identify potential improvements that could be made. The Village's UV disinfection system has significantly reduced the amount of chlorine contact time that is required within the system. As a result, the chlorine contact tank is no longer required and the minimum contact time is achieved along the transmission path. As a result, GHD looked at reconnecting the transmission main back into the distribution system, thereby using the capacity of that 12 inch main to feed distribution and not having to pump all the water as far. The ideal place to make that connection would be around the intersection of Jordan and Austin Streets. Doing so would significantly increase fire flow in the center of the system and provides benefits to the western part as well. That location meets the chlorine contact time requirements.

In the eastern part of the system the major mains are smaller in diameter and are older pipes. On East Street from the tank site heading south toward Onondaga, there is an 8 inch main, one of the primary supplies to the distribution system. That main has quite a bit of tuberculation and corrosion, so the pipe itself is functioning below its actual size and is a restriction. Thus GHD recommends replacing that main with a new 10 inch main. While doing so improves much of the flows, East Lake Street is still somewhat deficient as a result of also being built with smaller and older mains (the southern portion is 6 inch and 4 inch mains). GHD modeled the placement of a new 8 inch main all the way down; from Onondaga Street to the Village line. With these improvements the peak hour max day calculations are all above 35 psi.

The model predicts that all these improvements should result in meeting the ISO fire flow recommendations at a majority of locations (7 of 11) within the system. The remaining locations are served by 4 inch mains that should be routinely upgraded over time. Mr. Perkins questioned the specification of a 10 inch vs. 12 inch main for East Street. Mr. Castro acknowledged that 10 inch is an odd size and that 12 inch should probably be the recommended size.

The estimated costs for these improvements have been identified by each of the major items:

1. East Street Main replacement	$ 600,000
2. Transmission Main interconnection [A1]	130,000
3. South East Lake Street replacement (8 inch) [B1]	800,000
4. North East Lake Street replacement (8 inch) [B2]	400,000
TOTAL with all *	$1,930,000

*including transmission main interconnection to northern East Street and street repair, but excluding the 4 inch main replacement program

Discussion ensued regarding chlorination done by the City of Syracuse that is expected to continue in perpetuity because of its beneficial impact on the formation of zebra mussels within the line. If chlorination is happening there, is there still a requirement for contact time in the Village system? Mr. Hyde said that additional contact time is required, independent of the City of Syracuse. Mr. Castro said that moving the interconnection point would not have a dramatic positive impact on the results.

Further discussion took place regarding the opportunity to operate the two tanks in parallel rather than in series. Mr. Castro said that it would have no impact on fire flow, but that it would provide additional volume to fight a fire. There is no reason not to take that step so long as the Village is in compliance with its filtration avoidance plan, in other words as long as the UV disinfection is in service. Making the change requires just the consent of the Health Department. There is some leeway in the standards that allow for "off-spec" water (up to 5% on cryptosporidium and up to 1 day per month on giardium).

DMO Lotkowictz asked if this report now could be turned around and placed in the hands of the Department of Health for their approval. Mr. Castro agreed that was the correct next step.

Trustee Angelillo asked if any losses or leakage were detected during the analysis. DMO Lotkowictz replied that they had discovered that the City of Syracuse has an unmetered connection. While just a 1 inch pipe, it uses a lot of water. Factoring that in reduces unaccounted-for water substantially.

Mr. Perkins stated that the Fire Department has been informed by the Health Department not to use the hydrant system because of concerns that fighting a fire may put some water system customer below 20 psi, and potentially create a problem or collapse part of the system. The only time the hydrants should be used is if the Fire Department faces a life-threatening situation. As a result, the Fire Department is employing a mutual aid tanker response arrangement for anything that happens on the hydrant system. Dry hydrants connected to the lake could provide another source of fire-fighting capability. ISO considers that an acceptable secondary source according to Mr. Perkins.

Chairman Moffa observed that in his experience the health concern would generally trump the fire safety concern, because the potential for wide-spread sickness is a very serious concern.

Mr. Castro stated that in his discussions with the Health Department, they want to see a tank in the Town on the west side. He continued with a discussion of timing. None of these suggested improvements are time-consuming and could all be accomplished by the end of the year.

Chairman Moffa said that the Municipal Board will review the detailed report and propose a recommendation at its next meeting. The Board thanked Mr. Castro and Mr. Hyde for their report and presentation.

Next meeting – On Motion of Chairman Moffa, seconded by Comm. Blackler, the Board agreed to hold its next meeting on April 24, 2013.

On Motion of Comm. Hall, seconded by Comm. Blackler, the meeting adjourned at 8:25 pm.

Respectfully submitted,

Dennis Dundon
Clerk to the Boards