

SHARON WATER MANAGEMENT ADVISORY COMMITTEE (WMAC) MEETING MINUTES FOR MAY 18, 2006

Prepared by Paul Lauenstein

Present at meeting:

WMAC Chairman Michael Birschbach; WMAC members Paul Lauenstein, Richard Mandell, Rory McGregor, Jack Sulik, Cliff Towner; DPW Superintendent Eric Hooper; Sharon High School Representative Emily Tran

Summary of Minutes for the 5/18/06 WMAC Meeting

1. Approval of 4/6/06 minutes

2. Report of the Water Department

- Monitoring wells
- Nitrate testing
- Well pumping
- Energy conservation
- New well sites
- Emergency backup
- Iron/manganese filtration
- Water audits
- 2005 Annual Statistical Report

3. Water rates

4. Lawn Irrigation

5. Water bill inserts

6. Fire Hydrants

7. Priorities

8. Farewell to Emily Tran

9. Next meeting: Thursday, June 22, 2006 at 7:30 PM

Detailed Minutes for the 5/18/06 WMAC Meeting

1. Approval of 4/6/06 minutes

The minutes of April 6 were approved with minor changes.

2. Report of the Water Department

Monitoring wells

Eric Hooper presented updated monitoring well graphs showing seasonal fluctuations in the depths of the water table at various locations around Sharon.

Cliff Towner asked why the fluctuations in the water table appeared like smooth “U” shapes in 1998 and 1999, whereas the water table seemed to drop more suddenly in 2004 and 2005.

Eric Hooper explained that, beginning in 2002, readings of the monitoring wells have been taken monthly, whereas prior to that they were taken quarterly. Since the water table is responsive to short term changes in the weather, taking readings more often leads to a jagged-looking graph. He added that the recent heavy rains have caused the water table to rise markedly.

Jack Sulik said that many variables affect the water table, but no long-term trends are apparent since the town began collecting the data in 1999.

Paul Lauenstein commented that he prefers to see the data on a monthly basis since it can change quickly.

Nitrate testing

Eric Hooper reported that Well #2, which has the highest levels of nitrates of the six town wells, shows a slight upward trend, and is now averaging around 4 parts per million. Eric Hooper said he could not explain this, given the fact that Well #2 is located between Wells #3 and #4, which are both trending downward. He said this situation should be monitored.

The other three town wells have lower nitrate levels.

Eric Hooper explained that the nitrate samples are collected about 1/2 hour after startup of a well. If they are taken immediately upon startup (as they once were), the results are skewed.

Cliff Towner asked if Well #4 is being pumped less than usual. Eric Hooper replied that Well #4 is still running about 20 hours per day, but that overall pumping in April, at 39.6 million gallons, was relatively low. Wells #2 and #3 were both shut down during part of April for maintenance.

Jack Sulik said that if Well #4 were run continuously for 24 hours, the total amount of water pumped would exceed the 1,000,000 gallon per day DEP permit limit. He commented that the SCADA system has been very helpful in managing the town’s water supply system to comply with the terms of the DEP permit.

Cliff Towner asked if each well gets rested during each 24-hour period. Eric Hooper replied that each well gets turned off for part of each day except for Well #5, which is run continuously.

Well pumping

Eric Hooper presented a graph of monthly well pumping that showed the impact of a major leak that ran undetected for several months in the spring of 2005. Pumping in April of 2005 was considerably higher than in either April, 2004 or April, 2006.

Energy conservation

Cliff Towner suggested that employing VFD technology to the electric motors that drive the pumps at the six town wells might save electricity, the cost of which is rising rapidly.

Eric Hooper replied that although the new VFD technology does save electricity, the \$5,000 cost per motor cannot be justified unless it is done when the motor must be replaced for other reasons anyway. He said that there is no load factor built into Sharon's electric rate, so that turning the motors on and off carries no cost penalty. Eric Hooper explained that the Parco valves on the wells allow the flow to be increased gradually when the wells are re-started. He added that they are also supposed to prevent backflow. Backflow could contribute to unaccounted-for water.

Rory McGregor asked what the difference is between peak demand and load demand. Eric Hooper replied that peak demand occurs when the motor is running at top speed and drawing the maximum amount of electricity. Load demand is the sudden spike in the amount of electric power needed to start up the well.

New well sites

Eric Hooper reported that Greg Meister and he had inspected the Sharon Memorial Park cemetery well site with consultants from ESS. The next step is for the Selectmen to meet with representatives from the cemetery.

Eric Hooper said access to the Gobbi site for well testing is still in litigation.

Richard Mandell asked who currently owns the Gobbi property. Eric Hooper said Mr. Gobbi still owns it.

Emergency backup

Eric Hooper reported that progress on the emergency backup connection to Stoughton has been delayed because the wife of Stoughton DPW Director Larry Barrett has been ill. Meanwhile, Eric Hooper said he has been looking for sites along Bay Road where the pump could be located.

Cliff Towner asked if the pumps have to be located in Sharon, or if they could be located in Stoughton. Eric Hooper replied that they could be on either side of the line, but maintenance could be more complicated if Sharon DPW workers have to repair or maintain a pump located in Stoughton. Eric Hooper said the Selectmen from both towns would have to enter into an intermunicipal agreement.

Iron/manganese filtration

Eric Hooper explained that the retesting of the bacterial iron/manganese filtration system would be conducted in summer when the discolored water from pumping Well #6 would be adequately diluted by increased pumping from other wells to avoid consumer complaints.

Water audits

Eric Hooper reported that there was a poor response to the first water audit mailing, which was sent to heavy water users. He said the contractor for the water audits, Energy New England, would send out a second mailing.

Eric Hooper said he would check with Ken Wertz about auditing Sharon High School's water usage.

2005 Annual Statistical Report

Eric Hooper said that Sharon's residential gallons per capita daily (RGPCD) statistic was reported as 63 RGPCD in the Annual Statistical Report (ASR) to the Department of Environmental Protection (DEP). That is better than the state standard of 65 RGPCD.

Eric Hooper also said that unaccounted-for water (UAW) was 12.6%, somewhat worse than the state standard of 10%. He added that withdrawals from part of Sharon in the Neponset River basin exceeded the town's Water Management Act (WMA) permit quota, but withdrawals from the part of Sharon in the Taunton River basin were below the town's WMA permit quota.

Eric Hooper said that unaccounted-for water is not necessarily lost water. He said that as much as 75% of the water lost to leaky pipes returns to the aquifer from which it was pumped.

Cliff Towner said that less than 50% of the leaked water returns to the aquifer from which it was pumped because outlying neighborhoods are in different sub-basins, or are at lower elevations, and do not drain back to the wells.

Paul Lauenstein said he had a number of issues with the ASR. Michael Birschbach suggested that Paul Lauenstein communicate these issues to Eric Hooper privately, which Paul Lauenstein agreed to do.

3. Water rates

Paul Lauenstein said that it has been about five years since water rates were last revised. During that time inflation has eroded the value of the dollar by about 10%, effectively reducing the purchasing power of Water Department revenues. This year at least one important capital project was deferred for lack of funds.

Jack Sulik observed that the bottom rate of \$2.60 per 1,000 gallons has been in effect since 1991, and agreed that it is time to review the water rates.

Mike Birschbach commented that using less water keeps the total cost of water down by minimizing energy and chemical treatment costs, and higher water rates encourage conservation.

Jack Sulik said that Water Department funds are now being used for a broader array of purposes than in the past. Eric Hooper concurred, saying that the Water Department now pays for street sweeping and catch basin cleaning, costs that used to be paid by the DPW.

Cliff Towner asked if more partial salaries of employees in other departments are being paid out of Water Department funds than in the past.

Eric Hooper replied that it is true that some town employees who spend part of their time on water-related issues are partially compensated with Water Department funds, and have been for several years.

Cliff Towner asked if the percentages allocated to the Water Department have changed.

Eric Hooper replied that some have been increased.

Eric Hooper pointed out that Sharon has ascending block water rates, as recommended by DEP. When setting water rates, hearings are required, and the rates must be justified. The current rates are as follows for six months of usage:

0 – 15,000 gallons:	\$2.60 per 1,000 gallons
15,000 – 30,000 gallons:	\$3.00 per 1,000 gallons
30,000 – 45,000 gallons:	\$3.40 per 1,000 gallons
Over 45,000 gallons:	\$7.00 per 1,000 gallons

The minimum charge is \$30.00. Irrigation systems on separate meters pay the top rate of \$7.00 per thousand gallons.

Cliff Towner suggested raising the top block rate from \$7.00 to \$10.00. He said that heavy users should be targeted, whereas modest users should be rewarded for conserving.

Eric Hooper said raising prices at the low end of the usage spectrum would have virtually no effect on usage because people have to have a certain minimum amount of water for basic needs.

Paul Lauenstein said that he had developed an interactive pricing model based on water usage reflected on over 5,000 actual water bills from 2003. The model predicts the impact of user-defined water rates on water bills in 5,000 gallon increments, as well as the impact on Water Department revenues.

Jack Sulik said that the current policy of reading the water meters every six months would have to change in response to DEP policy so the meters will be read and the water bills will go out every quarter.

Eric Hooper said a radio meter reading system would be useful in facilitating more frequent billing, and added that with such a system, summer rates could be increased when water is scarcest.

Paul Lauenstein said that once a system is selected, it would behoove the town to accelerate the 5-year installation process, to facilitate both billing flexibility and also to monitor unaccounted-for water.

Richard Mandell asked about the process of introducing higher water rates. He said the public relations aspect of raising water rates should be addressed.

Cliff Towner agreed that a good case must be made for higher water rates. He said the aquifers must be protected, especially considering that most of the new development in Sharon has been occurring in areas that do not drain back to the wells, and substantially raising the top block rate would discourage wasteful water use practices.

Eric Hooper commented that the present water rates are low and should be raised. He said that in addition to conservation, higher rates are justifiable to cover rising costs, particularly energy and capital improvements such as replacing aging water mains.

Cliff Towner added that the town is actively engaged in developing a new well, which is essential and will cost a significant amount of money.

Paul Lauenstein mentioned the \$2 million price tag for the proposed iron/manganese filtration plant for Well #6.

Rory McGregor suggested presenting the community with an outline of the significant financial requirements of the Water Department over the next 5 years. He said environmental considerations should be the icing on the cake.

Paul Lauenstein said he has copies of water rates from a multitude of Massachusetts communities published by both Tighe and Bond and MWRA.

Jack Sulik said it would be Eric Hooper's responsibility to frame the arguments for raising water rates.

Eric Hooper said he would draft new rates, keeping them low for modest usage but increasing them for heavy usage.

4. Lawn Irrigation

Richard Mandell commented that lawn irrigation systems waste a lot of water in summer. He said sophisticated controllers are available to prevent irrigation systems from operating when there is sufficient moisture in the ground, or when rain is predicted in the near future. He proposed that all lawn irrigation systems in Sharon should be required to have such technology within five years. He suggested instituting a rebate policy to provide irrigation system owners with an incentive to install sophisticated controllers.

Cliff Towner said he would approach the Planning Board to discuss the impact of irrigation systems on Sharon's water supply. He added that he had recently witnessed an irrigation system on Juniper Road running illegally on Sunday while it was raining out.

Richard Mandell said that some other towns in the area have instituted outdoor watering bans.

Cliff Towner agreed, saying that Mansfield and Plainville do not allow lawn irrigation. However, the Mansfield Water Department got a very poor response to an offer of free leak detection dye tablets, toilet dams and showerheads.

Rory McGregor pointed out that Sharon's existing restrictions on outdoor watering are relatively progressive and have been effective at arresting the upward trend in water use over the past few years.

Eric Hooper said the focus should be on outdoor water use, adding that many irrigation systems develop leaks from freezing in winter.

5. Water bill inserts

Paul Lauenstein said the six month cycle for the present water bill insert entitled "Secrets of a Waterless Lawn" began in February and would end in July, so a new insert is needed to begin in August. He suggested a theme based on leaks, which constitute an average of about 10 gallons per capita daily, or 14% of average water usage in a non-conserving home, according to Amy Vickers' "Handbook of Water Use and Conservation." He added that toilets are a primary source of household leakage, and suggested including two dye tablets for diagnosing toilet leaks with the inserts.

Eric Hooper suggested that the insert should also address outdoor leakage from irrigation systems.

Paul Lauenstein said he would design the insert to address both indoor and outdoor leakage, adding that indoor water use constitutes the majority of all water use, even in summer.

6. Fire Hydrants

Paul Lauenstein presented a collage showing photos of fire hydrants around town that lacked the required 18" of clearance between the nozzles and the ground. He said that fire safety is one of the primary purposes of the water supply, but if the hydrants are inaccessible, they would not serve the purpose in an emergency.

Eric Hooper said older hydrants are not the breakaway type, so the water must be turned off to the whole neighborhood in order to work on them, making it difficult to correct the problem of adequate clearance above grade.

Paul Lauenstein asked if it would be possible to simply excavate around the hydrant to create the necessary clearance.

Eric Hooper said the well thus created could accumulate water and freeze in winter. Correcting the problem would require new hydrants. He said he would consult with the Fire Chief on the best way to approach the problem.

Michael Birschbach asked if this situation presented a significant safety risk.

Eric Hooper replied that this situation is not good, and should be corrected.

7. Priorities

Discussion of major priorities was deferred until the June meeting. Eric Hooper commented that with the election of a new Selectman/Water Commissioner, it would be appropriate to make a presentation of the WMAC's ideas and priorities to the Board of Selectmen.

8. Farewell to Emily Tran

On behalf of the WMAC, Richard Mandell expressed appreciation for Sharon High School senior Emily Tran's attendance at many WMAC meetings this year.

Rory McGregor asked Emily Tran who might take her place next year.

Emily Tran replied that she did not know, adding that there is no longer an environmental club at Sharon High School.

Richard Mandell commented that it is sad not to have environmental science or earth science curricula at the high school, given the world's current environmental peril and the effect it will have on the next generation.

9. Next meeting: Thursday, June 22, 2006 at 7:30 PM