

SHARON WATER MANAGEMENT ADVISORY COMMITTEE (WMAC) MEETING MINUTES FOR 1/22/04

Prepared by Paul Lauenstein

Present at meeting:

WMAC Chairman Rory McGregor; WMAC members Lealdon Langley, Michael Birschbach, Richard Mandell, Len Sekuler, David Mark, Roger Thibault, Jack Sulik and Paul Lauenstein; DPW Superintendent Eric Hooper; Finance Committee member Charles Goodman; Conservation Agent Greg Meister; and Lake Committee Chairman Cliff Towner

Summary of Minutes for the 1/22/04 WMAC Meeting

1) Reviewed and approved the minutes of the January 15, 2004 meeting as amended.

2) Voted on remaining Capital Spending Requests for FY '05

(Note: items "a" through "h" were voted on at the 1/15/04 meeting and are described in those minutes)

i) Contribute to purchasing Rattlesnake Hill

WMAC voted unanimously (9-0) to request \$150,000 in principal plus approximately \$75,000 in interest in FY '05 for the first of ten installments on a \$1,500,000 contribution to help purchase Rattlesnake Hill if the town and state arrive at an agreement with the landowners to purchase this land for \$15 million.

j) Purchase land for preferred well site

Five members voted against requesting \$150,000 in principal plus approximately \$75,000 in interest for the first of ten installments on \$1,500,000 to purchase land for a new town well in FY '05.

Four members voted in favor of requesting funds to purchase land for a new town well in FY '05.

k) Fe/Mn treatment facility for Well #6

WMAC voted unanimously (9-0) to request \$35,000 in FY '05 for feasibility study, design and engineering of an iron/manganese treatment facility for Well #6, with the expectation of constructing such a facility before the end of FY '06.

l) System maintenance and regulatory driven consultant services

WMAC voted unanimously (9-0) to request \$50,000 for leak detection and pressure testing, and \$75,000 for regulatory driven consulting services in FY '05.

m) Water conservation

WMAC voted unanimously (9-0) to request \$50,000 for promoting water conservation in FY '05.

n) Morse Street water main upgrade in FY '04

Five members voted against recommending the expenditure of \$255,000 to upgrade 2,000 feet of water main on Morse Street from 6" to 10" in FY '04 (the current fiscal year).

Four members voted in favor of completing this upgrade this spring.

A second vote was taken on Rory McGregor's compromise proposal to recommend accelerating this project from FY '06 to FY '05. This proposal passed 5-4.

o) Nitrate mitigation

WMAC voted unanimously (9-0) to request \$50,000 for determining the cause and curbing the increase in nitrates in town water.

3) Scheduled next meeting for Thursday, February 12 at 7:30 PM.

Detailed minutes for the 1/22/04 WMAC Meeting

1) Reviewed and approved the minutes of the January 15, 2004 meeting, with the following amendments:

- Greg Meister recommended including the study of an emergency hookup to MWRA water at Cobb's Corner as part of the \$50,000 outsourcing feasibility study recommended for FY '05.
- Len Sekuler and David Mark voted against purchasing the 30-acre property at Maskwonicut Street because of insufficient information regarding how buying this land relates to an overall water production redundancy plan.
- Michael Birschbach abstained from voting on requesting \$200,000 for pump tests at a preferred well site in FY '05 because he felt there was sufficient budgetary flexibility to get the job done in the unlikely event that all prerequisites were completed before the end of FY '05.

2) Voted on remaining Capital Spending Requests for FY '05

(Note: items "a" through "h" were voted on at the 1/15/04 meeting and are described in those minutes)

i) Contribute to purchasing Rattlesnake Hill

Eric Hooper explained that the rationale for spending Water Department funds to purchase land was to pre-empt development that would increase demand for water in Sharon. He said that a large development such as the 250 housing units proposed for Rattlesnake Hill might force the town to obtain supplementary sources of water at greater cost than the purchase of the land.

Charles Goodman commented that a legal opinion that it is not inappropriate or illegal to use water department funds for this purpose is available from Town Counsel Richard Gelerman.

Voting results:

WMAC voted unanimously (9-0) to request \$150,000 in principal plus approximately \$75,000 in interest in FY '05 for the first of ten installments on a \$1,500,000 contribution to help purchase Rattlesnake Hill if the town and state arrive at an agreement with the landowners to purchase this land for \$15 million.

j) Purchase land for preferred well site

Paul Lauenstein proposed requesting up to \$1.5 million to be paid over 10 years for purchasing land for a new town well in FY '05. He said four locations have been identified by the WMAC as possible well sites, and at least one of them is being actively considered for development. At least 11 acres would be required to provide the required uninhabited 400' radius Zone 1 surrounding the well. He said that Sharon needs new wells for operational flexibility as well as to preserve the town's independence from outside water sources. He reminded the committee that the town's six wells are aging. Well #4, the town's largest well, is 43 years old. He said he thought it would be wise to prepare to move quickly to purchase land if it became clear that a good well site were in danger of being developed before the end of FY '05.

Eric Hooper expressed his opinion that the site most likely to be developed in FY '05 is not likely to have a capacity over 200,000 gallons per day. He questioned the cost-effectiveness of spending \$1 to \$3 million to develop a well that could only produce 100,000 gallons per day. He said the Water Department should not be in the land acquisition business, and that Water Department funds are not unlimited.

Lealdon Langley said the Water Department should be in the business of acquiring land for the purpose of siting new wells, although he doubted the prerequisite evaluations and permits would be ready in time to actually buy land in FY '05.

Michael Birschbach said the precedent of contributing to the purchase of Rattlesnake Hill to prevent a large increase in demand for water had no bearing on the decision of whether or not to buy land for a well site.

Jack Sulik felt that it was premature to allocate funds without a clear idea of which site would be purchased and how much it would cost. He said it would be possible during FY '05 to obtain unbudgeted funds in an emergency, and cautioned against requesting substantial sums and then not spending the money.

Richard Mandell wanted to know the status of the WMAC's December recommendation that the Selectmen conduct exploratory test wells at four sites. Rory McGregor said the Water Resources Subcommittee should take the initiative to evaluate the four sites in question as soon as possible.

Greg Meister suggested that a representative from the town should be appointed to approach the landowners of prospective well sites to ask permission to conduct exploratory tests to evaluate potential productivity and water quality of these sites.

Voting results:

Five members voted against requesting \$150,000 in principal plus approximately \$75,000 in

interest for the first of ten installments on \$1,500,000 to purchase land for a new town well in FY '05.

Paul Lauenstein, Michael Birschbach, Richard Mandell and Lealdon Langley voted in favor of requesting funds to purchase land for a new town well in FY '05.

k) Fe/Mn treatment facility for Well #6

Eric Hooper said he thought it would only be possible to complete the design and engineering phase of an Fe/Mn treatment facility for Well #6 in FY '05 and that the construction phase should be planned for FY '06.

He said the additional capacity of Well #6 is only needed in summer.

Paul Lauenstein asked if pumping more water from Well #6 in summer would lower the water level of Lake Massapoag. Eric Hooper said the effect should be negligible since Well #3, which is closer, has no appreciable effect on the lake. He also said the Zone II of Well #6 does not reach the lake. Lealdon Langley said that spreading the summer demand for water among more wells once the Fe/Mn filtration is installed on Well #6 will reduce the impact on any one aquifer.

Roger Thibault asked about the results of a survey done by GZA to map the distribution of Fe/Mn near Well #6, and also whether a greensand or a membrane filtration method would be employed to remove the iron and manganese. Eric Hooper replied that GZA reported Fe/Mn to be widespread near Well #6. He said a membrane filtration system would be employed to remove the iron and manganese since it would require much less space and maintenance than the older greensand method.

Voting results:

WMAC voted unanimously (9-0) to request \$35,000 in FY '05 for feasibility study, design and engineering of an iron/manganese treatment facility for Well #6, with the expectation of constructing such a facility before the end of FY '06.

l) System maintenance and regulation driven consultant services

Eric Hooper proposed requesting \$50,000 for system maintenance (leak detection and pressure testing). He explained that these annual operations are routine requirements.

Eric Hooper also proposed requesting \$100,000 for other regulation and permit driven consultant services. He explained that Sharon annually faces unpredictable permitting and regulatory requirements. He cited the Vulnerability Assessment due in May and the Emergency Action Plan due in December, which he said would cost the town about \$25,000, as examples. He also cited the Consumer Confidence Report on water quality that is mailed annually to residents of Sharon, as well as water conservation programs as state-mandated programs paid for with these funds.

Rory McGregor pointed out that the Water Department's proposal for FY '05 capital spending already had an additional \$25,000 line item for water conservation, so only \$75,000 should be requested for other regulation and permit driven consultant services.

Voting results:

WMAC voted unanimously (9-0) to request \$50,000 for leak detection and pressure testing, and \$75,000 for regulation and permit driven consulting services in FY '05.

m) Water conservation

Paul Lauenstein of the WMAC's water conservation subcommittee presented the case for conserving water in Sharon. First, he read the following prepared statement.

“At last week's WMAC meeting, Jack Sulik shared his vision for Sharon's water supply. He predicted that 100 years from now, Sharon's water would come from desalination plants tapping the inexhaustible Atlantic Ocean.

Like Jack, I believe that increasing population will require innovative approaches, and I agree that technology must be brought to bear on the problem. However, unlike Jack's vision of using technology and energy to increase water supply through desalination, my vision is to use technology to reduce demand for water and achieve a sustainable equilibrium with our environment.

Better engineered devices such as reliable low-flow toilets and water-saving washing machines actually do a better job while using less water. In my view, the challenge for Sharon is to motivate residents to invest in such devices and reduce their consumption of water. If we succeed in significantly reducing water consumption, we may:

- *eliminate the cost of importing water*
- *prolong the life expectancy of our wells*
- *minimize the consequences of a well failure*
- *improve water quality (less induced infiltration)*
- *increase water pressure (tanks will remain fuller)*
- *improve effectiveness and life expectancy of our septic systems*
- *re-hydrate wetlands (higher water table)*
- *leave more water in the ground for springs that feed the lake*
- *maintain our water supply independence and remain immune from a terror attack on a regional water supply*

The water conservation subcommittee recommends that Sharon promote water conservation aggressively. We have prepared a list of suggestions for beginning a water conservation program. We hope the other members of the WMAC, the Selectmen and the Water Department will take water conservation seriously and provide the money, human resources and leadership to reduce water consumption in Sharon.”

Paul Lauenstein then presented the subcommittee's recommendations for a water conservation program in FY '05 as follows.

Water Conservation Subcommittee
Town of Sharon Water Management Advisory Committee

Water Conservation Recommendations - January 15, 2004

- Install and maintain meters on all schools and municipal facilities.
- Report school and municipal usage on Annual Statistical Report.
- Show breakdown of "Other" category on Annual Statistical Report.
- Examine the Water Department's method of calculating gpcd, by reviewing the residential population figure used, and addressing the apparent inclusion of residents served by private wells.

2. Pass a by-law requiring installation of low-flow toilets when buildings are sold.

3. Expand and promote rebate program. \$50,000

- Advertise rebate program using inserts with water bills.
- Promote rebates when issuing building permits.
- Include free dye tablets and instructions in water bills.
- Provide dye tablets to municipal offices and schools.
- Make sure free showerheads and faucet aerators work well.
- Require proof of replacement of inefficient device to qualify for rebate. Rebates to be credited to water bills. No cash refunds.

Front-load washing machines.....	\$200
Low-flow toilets (1.6 gallon).....	\$100
Showerheads (2.0 gpm).....	Free
Faucet aerators.....	Free
Dye tablets to detect toilet leaks.....	Free
Water audit.....	Free

4. Show comparative water usage on water bills. \$5,000

- Print instructions on how to compute gpcd on water bill.
- Print town average gpcd on water bill.
- Print usage for prior period on water bill.

5. Install pressure reducing valves wherever pressures exceed 85 psi. \$50,000

Some lower elevation neighborhoods such as Edge Hill Road may have excessively high water pressure leading to broken A/C water mains and wasted water due to faster flow in showers and taps. Effluent from septic systems in low areas does not recycle to aquifers feeding town wells, so water conservation in these areas is especially significant.

Roger Thibault said he thought that the \$50,000 indicated for installation of pressure reducing valves in low-lying neighborhoods would be better spent on addressing the issue of summertime lawn irrigation. He also felt that upwards of \$100,000 is too much to allocate for the first year of actively promoting water conservation. Len Sekuler endorsed this opinion.

Jack Sulik pointed out that no cash would be needed for rebates since they are accounted for as water bill credits to those taking advantage of the program, and recommended that no funds be allocated for this purpose.

Eric Hooper was concerned about manpower in the Water Department office to implement an effective water conservation program.

David Mark commented that the marketing and personnel costs of promoting water conservation effectively might warrant allocation of \$100,000.

Rory McGregor at first suggested that \$75,000 might be a good number for budgetary purposes, but, in deference to those who felt \$75,000 was too high, proposed a vote to recommend allocating \$50,000 for water conservation in FY '05.

Voting results:

WMAC voted unanimously (9-0) to request \$50,000 for promoting water conservation in FY '05.

n) Morse Street water main upgrade in FY '04

Paul Lauenstein proposed accelerating the Morse Street water main upgrade from FY '06 to this coming spring (near the end of FY '04). He said that replacing the existing 2,000 feet of 6" A/C pipe with larger pipe would increase the rate at which water could flow from the Massapoag Avenue tank to the Hampton Road tank. Therefore, this would reduce the rate at which the water level drops in the Hampton Road tank during period of peak summertime demand. He pointed out that this project had originally been budgeted for FY '04, and said it might expedite the flow of water from the Massapoag Avenue tank to the Hampton Road tank this summer.

Eric Hooper acknowledged that the Morse Street water main upgrade had originally been part of the FY '04 budget as a \$150,000 line item. However, he explained that when he was told to delay the proposed HPSD, he sent a letter to the Finance Committee saying the Morse Street water main upgrade, which is part of the HPSD project, should be postponed. He explained that Sharon's water distribution system is a grid of water mains, and that the Morse Street water main is not the only way for water to get from the Massapoag Avenue tank to the Hampton Road tank. He said enlarging this water main by itself would have no effect on the replenishment of the Hampton Road tank in summer.

Jack Sulik said that this project only makes sense in the context of the HPSD and by itself would not help fill the Hampton Road tank in summer.

Lealdon Langley observed that this project is listed as a separate line item in the FY '06 capital spending plan and that the main components of the HPSD are not scheduled until FY '09. He felt that the issue of the timing of this project is independent of the timing of the HPSD.

Cliff Towner asked Eric Hooper to show the committee how water flows from the Massapoag Avenue tank to the Hampton Road tank.

Eric Hooper acknowledged water flows from the Massapoag Avenue tank to the Hampton Road tank via Morse Street. He then challenged Cliff Towner to tell the committee how much more water would flow from the Massapoag Avenue tank to the Hampton Road tank if the main on Morse Street were enlarged.

Cliff Towner replied that a 10" pipe holds 4 gallons per linear foot, whereas a 6" pipe only holds 1.5 gallons per linear foot, so the flow in a 10" pipe is more than double that of a 6" pipe. He said there was no down side and a significant up side to replacing this main as soon as possible.

Richard Mandell referred to the Final Hydraulic Model and Master Plan Update for Sharon, Massachusetts (January, '04) by Metcalf & Eddy, pointing out that this report recommends upgrading the Morse Street main as part of the recommended Low Pressure Service District

improvements. He said he could not see any benefit in delaying this project.

Greg Meister said he understood that the Morse Street water main upgrade was intended to be a component of the proposed HPSD, but he felt this upgrade would relieve a bottleneck in the system and there was no reason not to do it this spring.

Charles Goodman pointed out that funds were allocated in the FY '04 budget for this upgrade. He asked why the Water Department typically requested much more money in the capital spending plan than it actually spends. He reminded the committee that in FY '03 approximately \$300,000 was requested but only \$123,000 was spent, and in the first 6 months of FY '04, only about \$370,000 of the budgeted \$966,000 had been spent as of December, 2003. He said if the projects are needed, they should be completed, and if not, they should not be budgeted. He noted that the \$370,000 spent so far this fiscal year was largely for A/C water main replacement done on Winslow, Gabriel, Stony Brook and Depot Streets by Mclaughlin Bros., as well as consulting done by Amory Engineers, Metcalf & Eddy, Weston & Sampson and others.

Voting results:

Five members voted against recommending the expenditure of \$255,000 to upgrade the water main on Morse Street in the current fiscal year (FY '04).

Paul Lauenstein, Richard Mandell, Michael Birschbach and Lealdon Langley voted in favor of completing this upgrade this spring.

Jack Sulik commented that the five opponents of this proposal are engineers and the four proponents are not engineers.

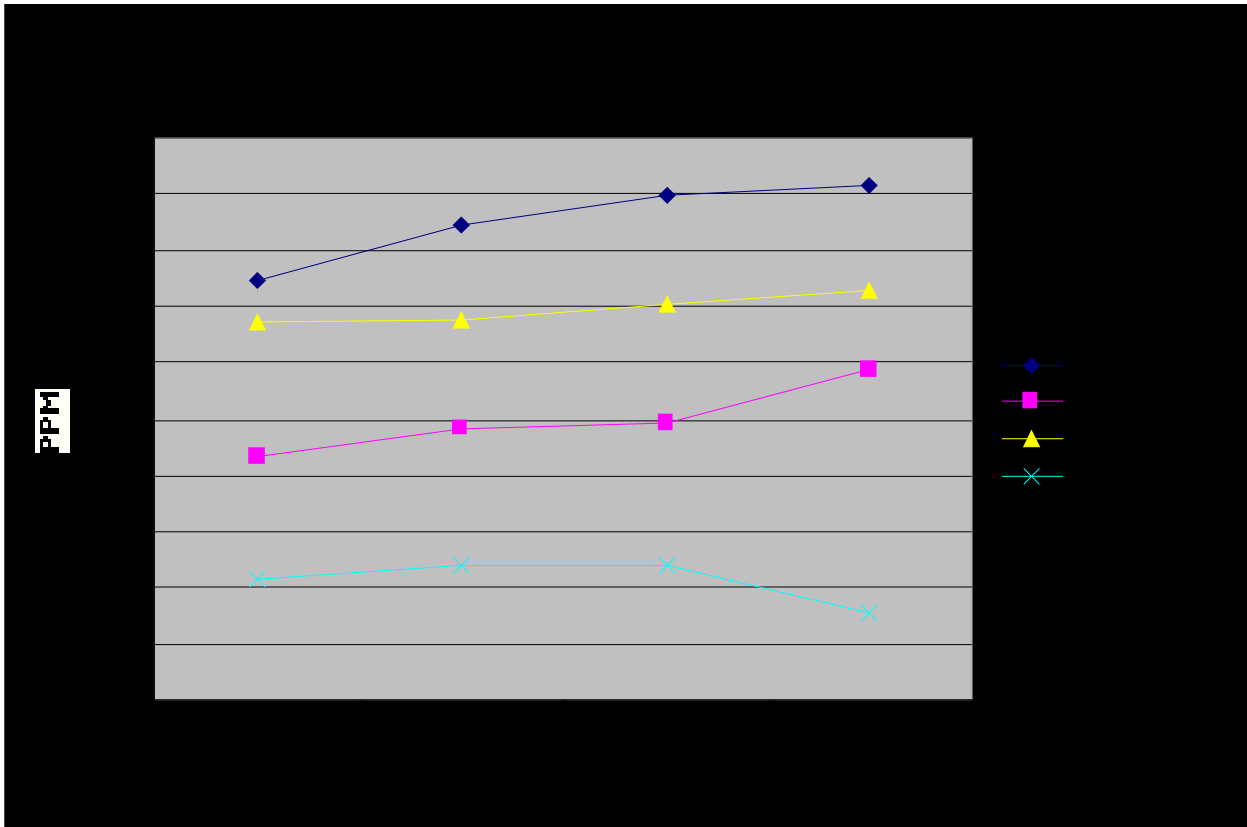
A second vote was taken on Rory McGregor's compromise proposal to recommend accelerating this project from FY '06 to FY '05. The outcome of this vote was 5-4 in favor, due to Rory McGregor voting with the four members who want to accelerate this project.

o) Nitrate mitigation

Paul Lauenstein proposed that the WMAC recommend spending up to \$50,000 to hire a consulting firm to investigate the source of nitrate contamination in the three wells along Beaver Brook, and to recommend a mitigation strategy. He presented a graph illustrating a steady rise in average nitrate readings at these three wells over the past four years. He said that nitrates have tested above 5 parts per million in Well #2 four times in the last year and a half, and that, if this trend persists, there is a danger that the town could lose the use of this well. Well #4, which accounts for one third of the town's water, must be run continuously to avoid elevated nitrate readings. Interestingly, the trend line of readings in Beaver Brook does not rise with those of the three nearby wells, suggesting that the nitrates come from somewhere else.

Jack Sulik commented that the problem is attributable to buildup of nitrates from septic systems in the aquifer.

Eric Hooper recounted that the Water Department had done a preliminary investigation into this problem. He said that, at that time, the Selectmen balked at the prospect of spending the additional \$35,000 recommended to study the matter more thoroughly.



Average nitrate readings (PPM):

	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>
Well #2	3.72	4.22	4.48	4.58
Well #3	2.16	2.41	2.47	2.93
Well #4	3.37	3.39	3.51	3.65
Beaver Brook	1.09	1.20	1.19	0.78

Voting results:

WMAC voted unanimously (9-0) to request \$50,000 for determining the cause and curbing the increase in nitrates in town water.

3) Other business

Michael Birschbach requested that the Water Department provide each member of the WMAC with monthly pumping records for each of the six town wells.

Rory McGregor announced that there would be a training session for the newly calibrated hydraulic model on Wednesday evening, February 4, at the Sharon Water Department. Eric Hooper said the purpose of the training, conducted by Metcalf & Eddy, is to upgrade town engineer Peter O’Cain’s facility with operating the model, and that monitoring by WMAC

members would have to be done in such a way as not to interfere with this purpose. It was tentatively agreed that only one WMAC member, Roger Thibault, would attend this training.

4) Scheduled next meeting for Thursday, February 12 at 7:30 PM.