

SHARON WATER MANAGEMENT ADVISORY COMMITTEE (WMAC) MEETING MINUTES FOR AUGUST 17, 2006

Prepared by Paul Lauenstein

Present at meeting:

WMAC Chairman Michael Birschbach; WMAC members Paul Lauenstein, Richard Mandell, Rory McGregor, Len Sekuler, Mike Sherman, Jack Sulik, Cliff Towner; DPW Superintendent Eric Hooper; citizen Marcia Liebman

Summary of Minutes for the 8/17/06 WMAC Meeting

1. Approval of 6/22/06 minutes

2. Energy efficiency of Sharon's six municipal wells

3. Resignations of Cliff Towner and Richard Mandell

4. Private wells should comply with irrigation restrictions

5. Report of the Water Department

- DEP's draft Water Management Act permit for Sharon
- Groundwater levels
- Nitrates
- Water main break
- Storm-related damage to SCADA
- New well sites
- Emergency backup
- Iron/manganese filtration
- Water audit program
- Year-to-date water usage

6. Water rates

7. Resignation of Chairman Michael Birschbach

8. Election of new officers

9. Next meeting: Thursday, September 14, 2006 at 7:30 PM

Detailed Minutes for the 8/17/06 WMAC Meeting

1. Approval of 6/22/06 minutes

Cliff Towner asked Jack Sulik if he actually said that pumping 100 million gallons more water per year in Sharon would not matter, as quoted on page 4 of the draft minutes. Jack Sulik assented that he did say that and he meant it.

Cliff Towner asked Jack Sulik if he actually said that the water in the cedar swamp is not under the influence of the town wells, as quoted on page 5 of the draft minutes. Jack Sulik assented that he did say that and he meant it.

Cliff Towner asked Eric Hooper if he actually said that the water quality and capacity of the Islamic Center site are both superior to the Canton Street site, as indicated on page 6 of the draft minutes. Eric Hooper confirmed that he had said that. He added that there are no state criteria for iron or manganese. Cliff Towner replied that the iron and manganese would have to be removed from water pumped from a well at the Islamic Center in order to sell commercial quantities of water.

Eric Hooper asked that the word “major” be deleted from page 2, where it had been used to modify “adjustments to the metered pumping reported for Wells #2 and #7 had also been made on the 2005 Annual Statistical Report.”

The minutes were unanimously approved with removal of the word “major.”

2. Energy efficiency of Sharon’s six municipal wells

Cliff Towner distributed copies of NSTAR forms related to obtaining rebates for installing Variable Speed Drives (VSDs) that reduce the amount of energy required to operate the town’s six wells. He pointed out that Sharon’s cost of electricity has recently leaped from 4¢ to 10¢ per KWH. He suggested that the committee look into installing energy-saving equipment on the town’s six wells and applying for a rebate from NSTAR, and provided the name and phone number of the representative from NSTAR in charge of rebates for VSDs (Cherie Miles, 781-441-8037).

Mike Sherman commented that he is acquainted with Ms. Miles. He added that he had spoken to Nelson Maderos at NSTAR two months ago about the possibility of reducing the energy needed to pump water from Sharon’s six wells.

Cliff Towner said that the rebates are higher for bigger motors, and said that this technology could have other cost-saving applications in the town, such as HVAC systems in Sharon schools.

Eric Hooper expressed doubt that VSD technology would be worth the investment because the wells are run at only one speed and are either on or off. He also said that the chemical feeds (chlorine, fluoride and KOH) must be synchronized with the rate of pumping.

Mike Sherman said NSTAR offers a free technical review to assess the cost/benefit potential of energy-saving devices.

Eric Hooper said he had NSTAR perform a technical review six months ago which indicated that the cost outweighed the benefit. He added that Sharon’s energy use does not come under the purview of the WMAC.

Len Sekuler echoed that thought, saying that energy conservation may be a fantastic idea, but it should not be the focus of the WMAC, which should stick to water-related issues.

3. Resignations of Cliff Towner and Richard Mandell

Cliff Towner announced that he had sent a letter of resignation to the Selectmen. He said that as a member of the WMAC appointed by the Selectmen he does not feel at liberty to attack their policies and priorities. He explained that he believes the Selectmen have a pro-development, anti-environment agenda which is contrary to his own philosophy of protecting and preserving Sharon. He said a few influential people are selling out the town, and developers are circling like vultures.

Cliff Towner said that even though Sharon has serious environmental problems related to mismanagement of its water resources, the Board of Selectmen and the Sharon Water Department have resisted and delayed some of the high-priority recommendations made by the WMAC. He said that the Selectmen are focused on money, not water, a direction he finds distasteful. He said the Selectmen prefer that the WMAC go along to get along, even though the town is facing a water crisis. He said he has no interest in serving a Board of Selectmen that says Sharon doesn't have a serious water problem, and believes that open space is wasted space.

Cliff Towner thanked both Rory McGregor and Michael Birschbach for their services as chairmen of the WMAC during his tenure as a member.

Marcia Liebman noted that when she had resigned as a library trustee due to irreconcilable differences with others on the Library Board of Trustees, Town Counsel Gelerman had advised her that every public official has the right and even the obligation to express their views candidly regardless of whether those views were at odds with the priorities of town leaders. She said she hoped Cliff Towner would continue to have input into public life in Sharon.

Richard Mandell announced that he had decided not to renew his membership. His term ends in September.

4. Private wells should comply with irrigation restrictions

Richard Mandell said that he had one last motion to make as a member of the WMAC. He made the following motion:

All water is a public resource of the Town of Sharon. Regardless of whether the hole or well through which it is retrieved or pumped is on private land or public land, the water is still a public resource. As such, the resource itself should be subject to the same regulations and restrictions of use including watering of lawns as per the schedule announced by the Water Commissioners of the Town of Sharon.

Richard Mandell noted that both Falmouth and Middleton have implemented by-laws that require private well owners to adhere to the same irrigation restrictions that apply to public water customers.

Eric Hooper pointed out that wetlands monitoring indicates that no adverse impact or significant change has occurred as a result of Sharon's well pumping, so there is no need to restrict water use by private wells. In support of his position, he read the following excerpt from Sharon's draft Water Management Act withdrawal permit recently issued for comment by the Department of Environmental Protection (DEP):

13. Wetlands Monitoring

Wetlands monitoring data has been reviewed by the Department and it has been determined that no further monitoring is required as a condition of this permit. Therefore this condition has been eliminated.

Cliff Towner commented that the draft permit has not yet been finalized. He said the substance of the permit was based exclusively on input from the Sharon Water Department, and ignored evidence from other sources that Sharon's wetlands have indeed been adversely impacted by pumping. Eric Hooper challenged Cliff Towner's assertion, asking why he could not accept the fact that Sharon's pumping has no significant impact on Sharon's groundwater or its environment.

Jack Sulik commented that initiatives related to protecting wetlands are the business of the Conservation Commission, not the WMAC. He added that in cases like Avalon Bay with private irrigation wells located on the edge of town downstream of the municipal wells, restricting their irrigation would not affect Sharon's groundwater aquifers. Jack Sulik stated again that Sharon's groundwater is not under stress.

Cliff Towner pointed out that there are many other private wells in other parts of town that do draw from the same groundwater that feeds town wells.

Eric Hooper said that even if Sharon required private well owners to abide by the same irrigation restrictions that apply to those using municipal water, there would be no way to apply the same penalty for a violation because the penalty is a water bill surcharge, and private well owners do not get billed for their water use.

Len Sekuler said he saw no reason why private well owners should not have to abide by the same restrictions that apply to residents using municipal water.

Jack Sulik replied that property owners have the right to drill wells on their land and use the water without limitation by the government.

Cliff Towner said water is a vital public resource shared by all, and as such is subject to government regulation.

Jack Sulik challenged Cliff Towner to show him a law that says landowners do not own the water under their land.

Cliff Towner said that it is not legal to wreck wetlands. He commented that most of the water used for irrigation evaporates, depriving wetlands of the water they require.

Eric Hooper said that in order to limit the amount of water used by private wells based on protecting wetlands, it must first be proved that pumping private wells harms wetlands. He said that in Sharon, where most homes have septic systems, landowners must obtain a permit from the Board of Health in order to install a private well. Because of setback requirements to maintain sufficient separation between septic systems and wells, most parcels of land in Sharon are not big enough to accommodate a private well. Eric Hooper added that limiting irrigation by private wells might create issues with golf courses and cemeteries.

Paul Lauenstein re-read Richard Mandell's motion, and a vote was taken. The motion passed 6-1-1.

5. Report of the Water Department

DEP's draft Water Management Act permit for Sharon

Eric Hooper expressed dismay that local watershed associations had obtained copies of Sharon's draft Water Management Act (WMA) water withdrawal permit from the Department of Environmental Protection (DEP). He was critical of local watershed associations getting involved in the comment process, and objected to them providing copies of the draft permit to Sharon WMAC members.

Paul Lauenstein replied that he had obtained his copy of the draft permit directly from the Department of Environmental Protection. Eric Hooper said in that case he has a beef with DEP.

Eric Hooper stated that the East Branch of the Neponset River, which is supplied in part by runoff from Sharon, is not classified as stressed by the Massachusetts Water Resources Commission. He said the draft permit specifies that low flow at the Wading River stream flow gauge in Norton may trigger restrictions in Sharon's water use.

Eric Hooper said that Sharon's reliance on septic systems rather than a municipal sewer system means that Sharon does not have the same opportunity as sewered communities to offset increases in its water use by remediating inflow and infiltration (I & I). He said that he intends to propose that Sharon report its net water use after subtracting estimated recharge via septic systems in its Annual Statistical Report to DEP.

Paul Lauenstein asked how Eric Hooper planned to determine the amount of water that gets recharged to the ground, and how much evaporates.

Eric Hooper replied that he intends to estimate the amount of recharge based on average winter use, which is entirely indoor use and mostly flows into septic systems.

Mike Sherman pointed out that a significant portion of the municipal water delivered to homes in Sharon enters the ground in sub-basins that do not feed the same aquifers that are tapped by Sharon's municipal wells. He questioned the validity of counting that portion of the water as an offset to pumping more water from other sub-basins.

Eric Hooper replied that there are only a handful of basins in Sharon, one of which feeds the Taunton River watershed and another feeds the Neponset River watershed.

Michael Birschbach suggested that understating Sharon's water use by netting out the amount returned via septic systems could have the unintended consequence of even tighter DEP withdrawal limits.

Mike Sherman asked what implications the draft permit might have for the plan to build an iron/manganese filtration plant and then increase pumping at Well #6.

Eric Hooper explained that the draft permit establishes daily and annual withdrawal limits for both the part of Sharon that contributes to the Taunton River watershed as well as the part that contributes to the Neponset River watershed. Because the Taunton River is officially classified as stressed, if Sharon exceeds its permitted withdrawal from the three wells in the Taunton watershed it must submit an offset feasibility plan itemizing ways in which Sharon can mitigate the impact of increased withdrawals related to growth. With the plan to install an iron/manganese filtration facility on Well #6, which is in the Taunton watershed, future pumping in that part of town could increase significantly to supply water for new developments in Sharon. That could trigger a requirement for offsets; hence, the idea to use septic recharge to fulfill the offset requirement.

Eric Hooper pointed out that Sharon currently gets the majority of its water from the three wells along Beaver Brook in the Neponset watershed. Only the Neponset River upstream of the point at which the East Branch joins it is officially classified as stressed (the downstream reaches remain unclassified), so Sharon is free to pump more water from those three wells as long as the total permit limit for the town is not exceeded. If Sharon's WMA permit limits the amount allowed to be pumped by the other three wells in the Taunton watershed, it would become more difficult to shift withdrawals to those wells, limiting the benefit of installing an iron/manganese filtration system at Well #6.

Mike Sherman asked if the draft permit's limitation on withdrawals from the Taunton River watershed in Sharon would affect plans to build a new well at the proposed Islamic Center site.

Eric Hooper replied that it would, saying that the limits in the draft permit for wells in the Taunton River watershed would diminish the usefulness of another well in that part of town.

Jack Sulik commented that the main purpose of a new well in Sharon is to improve operational flexibility and redundancy rather than to increase the total amount of water withdrawn.

Eric Hooper explained that the WMA permit imposes daily and annual limits on the amount of water that may be withdrawn from each of the town's six wells. In addition, there is a daily cap for all six wells combined of 3.1 million gallons, which is greater than the sum of the individual daily caps of the six wells. The total amount of pumping proposed in the draft permit of 667 million gallons per year is substantially higher than 65 gallons per capita per day, since it also includes commercial, municipal, and unaccounted-for volumes.

Richard Mandell asked if wastewater from a major development at Rattlesnake Hill (i.e. Brickstone) could be used as an offset to justify increased withdrawals from the Taunton River basin.

Eric Hooper replied that Brickstone is talking about importing water from MWRA. If that happens it would supplement Sharon's recharge of local groundwater, and eliminate objections to the development based on the availability of local water.

Groundwater levels

Eric Hooper reported that monitoring well data indicated a drop in the water table consistent with expectations for July and August.

Nitrates

Eric Hooper reported that nitrates in wells #3 and #4 continue their gradual downward trend. Well #2 on the other hand is exhibiting a gradual upward trend. Even so, Well #2 is still below 5 parts per million (ppm) so it is not yet a problem. Eric Hooper commented that Well #2 is a well field comprised of multiple shallow wells, but that does not explain why nitrates are rising there.

Water main break

Eric Hooper reported a water main break on Wednesday, August 2, at East Street and Bay Road. Eric Hooper said that the water level in the Massapoag Avenue tank did not respond, suggesting that the enlargement of the Morse Street pipe was not effective in transferring water to the east side of town in an emergency.

Storm-related damage to SCADA

Eric Hooper reported that a powerful microburst associated with a thunderstorm caused a power surge that knocked out a logic board in the SCADA system. He said the Water Department elected to buy a replacement board, including upgraded software and a new Windows XP operating system, rather than spending \$160,000 for a new SCADA system that would automatically synchronize the chemical feed pumps with the well pumps.

Eric Hooper explained that the SCADA system automatically controls the pumping of the six wells according to the water levels in the town's four water storage tanks. He said that during the crisis the chemical feed pumps at Well #5 kept running even though the well stopped pumping, and the alarm was silenced by the power outage.

New well sites

Eric Hooper said he had met with representatives from DEP to discuss the cemetery site and the Chase Drive site. Eric Hooper said that the new WMA permit will be a factor in determining where to locate a new well.

Emergency backup

Eric Hooper reported that he had postponed a meeting with the Stoughton Water Department. He said that in addition to locating an emergency connection to one of the three Bay Road sites, there is now a fourth option involving the proposed 1800-unit Brickstone development. If supplying Brickstone with water requires Sharon to establish an OP 10 connection to MWRA to import

supplementary MWRA water, it would obviate the need to establish an OP 5 emergency connection to Stoughton for MWRA water. Eric Hooper added that Stoughton is interested in extending a water main further down Bay Road to serve a development on the Stoughton side of Bay Road in the vicinity of the proposed entrance to the Brickstone development.

Jack Sulik said that providing water to Brickstone would trigger a big demand for water from private well owners along Mountain Street.

Iron/manganese filtration

Eric Hooper said that heavy rains in May and June had reduced demand for outdoor water so the need to pump Well #6 to satisfy summer demand had been until mid-August. He said he had arranged for pilot testing of the iron/manganese filtration system at Well #6 to begin in September.

Water audit program

Eric Hooper reported that so far Energy New England has mailed 450 letters to addresses of high users provided by the Sharon Water Department. He said the response has been consistent with other towns.

Eric Hooper reported that he had received the results of five school audits from Energy New England. He said there are competing interests, such as playing fields that need more irrigation water, that are at odds with conserving water at the schools. He said the audits provided some good suggestions, such as foot pedal activators for cafeteria sinks, but they are costly to implement, and should be implemented in conjunction with future renovations. He said leaks should be fixed.

Paul Lauenstein requested that the reports be made available to WMAC members. He added that as long as water is provided to the schools gratis, there is no financial incentive for the schools to conserve water.

Jack Sulik suggested that the schools should be charged for the water they use.

Rory McGregor commented that billing the schools for water would stir up controversy.

Year-to-date water usage

Eric Hooper distributed a graph showing monthly water usage since 1995.

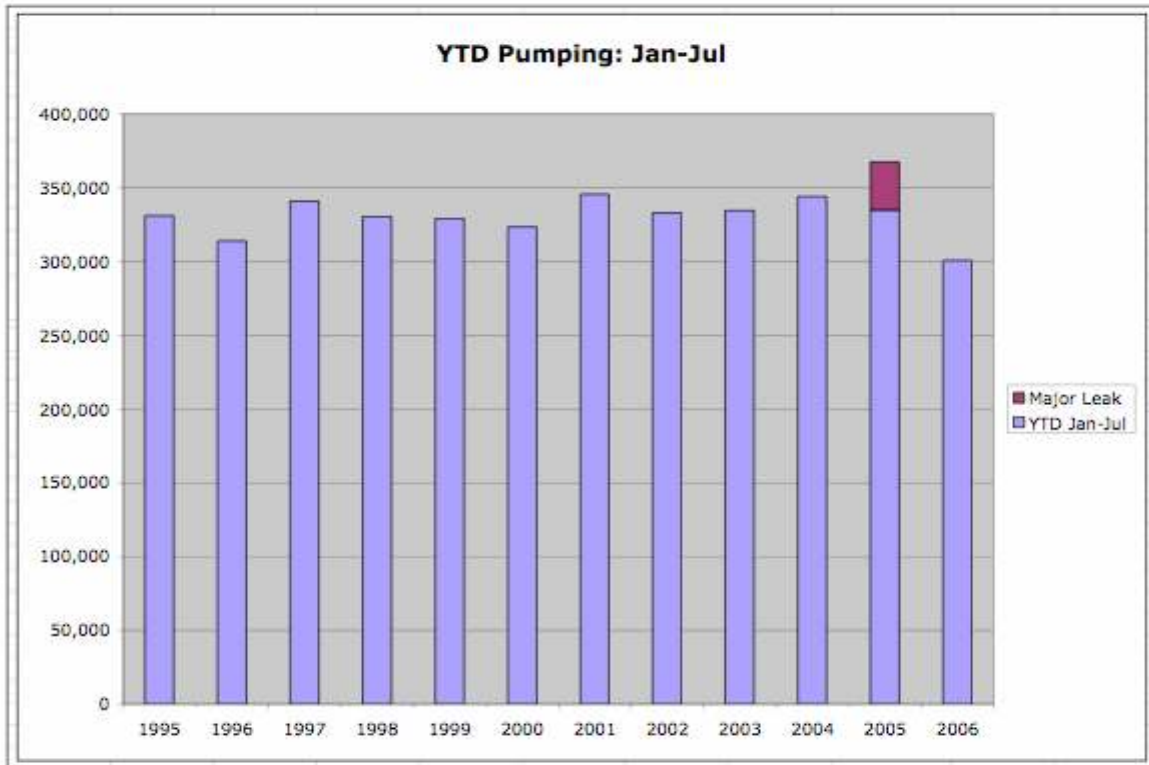
Len Sekuler noted that there seems to be a downward trend in water usage so far in 2006.

Paul Lauenstein commented that heavy rains in May and June undoubtedly reduced demand for irrigation water, but pointed out that every month this year including July, which was drier than average, showed lower water usage than any corresponding month going back six years.

Eric Hooper said that kitchen and bathroom renovations have resulted in more efficient plumbing fixtures, which might explain some of the downward trend.

Marsha Liebman suggested that low-flow washing machines installed as a result of the rebate program might be a contributing factor.

Paul Lauenstein said that the 200 or so washing machines that have been installed as a result of the rebate program might account for a reduction of a million gallons, but year-to-date usage in 2006 is over 30 million gallons less than the average for the prior decade. He commented that the water bill inserts might have something to do with the lower usage. Paul Lauenstein distributed the following graph showing the decline in year-to-date water usage.



Paul Lauenstein added that only five residential water audits have been completed so far, so that program cannot account for the decline in Sharon's water usage. However, Paul Lauenstein handed out a booklet produced by the Metropolitan Area Planning Council (MAPC) entitled Summer Smart Water Use that indicates on page 19 that Acton's water audit program has resulted in an average 23.3% reduction in water use in the audited homes. Concord's water audit program has also been effective, and so has their overall water conservation program, as indicated by the following handout:

Results from Concord's Water Audit Program (66 audits conducted since 2002):					
2002			2003		
Average Annual Use			Average Annual Use		
17 Audits done in 2002:			24 Audits done in 2003:		
	HCF	Gallons		HCF	Gallons
2002	403	301,444	2002	274.3	205,176
2003	276	206,448	2003	197.9	148,029
2004	276	206,448	2004	186.0	139,128
2005	265	198,220	2005	197.8	147,954
Weather conditions in Concord			Concord's Total Water Pumping		
Average Temperature (May-Sept.)			Fiscal Year:		
2002	77.4°		1998	758 MG	
2005	77.2°		2006	673 MG	
Average Max. Monthly Temperature (May-Sept.)			Savings:	85 MGY	-11.20%
2002	92.0°		Concord's Residential Water Use		
2005	91.4°		Fiscal Year:		
Average Precipitation in Concord (May-Sept.)			1998	500 MG	
2002	14.86"		2006	417 MG	
2005	13.53"		Savings:	83 MGY	-16.60%

6. Water rates

Paul Lauenstein noted that rates would have to be raised in order to maintain sufficient revenues to operate Sharon's water system and make necessary repairs and improvements to infrastructure in the context of declining water usage. He recalled that replacement of aging cast iron pipes in the center of town had been deferred due to lack of funds. He commented that inflation has eroded the purchasing power of Water Department revenues by over 10% since water rates were last increased in 2001. He also said that the cost of electricity to run the town's six wells would jump from 4¢ per KWH to 10¢ per KWH in September of 2006, adding roughly \$150,000 per year to the Water Department's annual budget.

Eric Hooper proposed that the lowest block rate of \$2.60 per thousand gallons for the first 15,000 gallons per six-month billing period should be raised to \$3.00 per thousand gallons. He said that would increase revenues by \$75,000 dollars per year. He recommended against raising the highest block rate, saying that even a big hike in the highest block rate from \$7.00 per thousand gallons to \$12 per thousand gallons would only raise revenues by about \$14,000 because so few residents use more than 45,000 gallons per six-month billing period.

Paul Lauenstein replied that even though only a relatively small number of customers are in the highest block, using over 45,000 gallons in a six-month billing period, they account for a disproportionate amount of total water usage. He said that Eric Hooper's calculation of a mere \$14,000 increase in revenues as a result of a \$5.00 increase in the highest block rate must be off by an order of magnitude.

Michael Birschbach questioned the appropriateness of balancing the Water Department's budget by raising the rates of those who use the least water.

Marcia Liebman agreed, saying that those who use little water are often people who cannot afford the luxury of expensive irrigation systems. She recommended rewarding those who use little water by keeping the lowest block rate the same, increasing the higher block rates instead.

Jack Sulik recommended eliminating the lowest block and increasing the highest block from \$7.00 per thousand gallons to \$10.00 per thousand gallons. He added that water generally sells for far less than its value.

Len Sekuler suggested increasing each of the block rates by a progressively higher percentage. He suggested an increase of 3% for the lowest block rate and an increase of 8% for the highest block rate.

Paul Lauenstein replied that those increases would not fully compensate for over inflation in costs since 2001. He added that rate increases must generate enough revenue to pay for necessary maintenance, new wells, iron/manganese filtration, increased energy and chemical costs, increased labor costs, and other necessary costs associated with running the Water Department, as well as anticipating further reductions in water usage resulting from conservation efforts. A projection of both operating costs and capital costs for the next few years should be prepared as a starting point for revising water rates.

Paul Lauenstein reported that he had prepared and emailed to Eric Hooper an Excel spreadsheet based on 5,560 actual water bills that can predict the effect of user-defined water rates on water bills in each 5,000 gallon usage bracket from 5,000 to over 1,000,000 gallons in a six-month billing period, as well as predicting the effect of those user-defined rates on revenues. He said that once budgetary needs have been established, the spreadsheet could be used to experiment with various rate structures and predict whether any given rate structure would be sufficient to meet those budgetary needs. Paul Lauenstein volunteered to assist in the process of evaluating the effect of various rate proposals on revenues and water bills.

7. Resignation of Chairman Michael Birschbach

Michael Birschbach announced that he has decided not to apply for another term as a member of the WMAC. Since his term expires in September, this is his last meeting. He suggested electing new officers.

Jack Sulik commented that his own future membership on the WMAC will depend on the Selectmen granting him a residency waiver since he is moving away from Sharon.

8. Election of new officers

Paul Lauenstein offered to serve as interim chairman until a determination can be made regarding vice-chairman Lealdon Langley's interest in the job, and provided that someone else agrees to become Secretary and take the minutes.

Rory McGregor offered to become Secretary and take the minutes.

This arrangement was moved by Mike Sherman and voted unanimously.

9. Next meeting: Thursday, September 14, 2006 at 7:30 PM