

# MWRA ADVISORY BOARD

WATER SUPPLY UPDATE

APRIL 1988

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A monthly report of news and information about water management and conservation in the MWRA area. Provided as a service to cities and towns by the Advisory Board.

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## TASK FORCE RELEASES INTERIM REPORT ON ALGAE PROBLEM

The joint MWRA/MDC task force investigating the taste and odor problems of MWRA water has released an interim report which recommends steps for better controlling the algae problem. Copies of the report have been mailed to all local water departments by MWRA Public Inquiry Manager, Sonnie Robinson.

The bad-tasting water has been attributed to the presence of an algae variety known as Synura in the colder depths of water near the Cosgrove intake at the Wachusett Reservoir. Because the Synura live in deep water, they are less affected by the conventional use of copper sulfate which dissolves and kills algae near the surface. The report advises that taste and odor problems are likely to persist unless new methods are used to: 1) apply copper sulfate deeper in the water, and 2) control the ecological conditions which contribute to algae growth. It suggests that a model control strategy can be found by looking at how the agricultural industry solves weed and insect problems using Integrated Pest Management (IPM).

In describing this new strategy, the report states: "IPM relies on careful monitoring of pest populations and knowledge of the biology of individual species to target pesticide application when it can be most effective. Nuisance algae blooms are the aquatic equivalent of weed problems in agriculture, and a similar strategy can work in the Wachusett Reservoir." Implementing such an approach will require an improved understanding of the life cycles of algae species and the circulation patterns of water in the reservoir, according to the report's authors. A six point research program is proposed to gather the necessary information.

In the report's assessment of the problem, these conclusions were reached: Undesirable algal growths are stimulated by nutrients supplied by runoff from urban and agricultural areas; Tastes and odors can be increased in distribution pipes with poor circulation; Synura release chemical compounds which impart taste and odor to the water, but there is no evidence that these compounds pose any health risk to water consumers (in fact similar compounds are used as flavorants in the food industry); It is likely that Synura will remain in Wachusett water in future years because reproducing cells are often released into the sediment.

from communities regarding rusty water coming out of customer's taps. In response, the MWRA contracted with the consulting firm of Whitman & Howard, Inc. to determine the cause of the problem and recommend solutions to it. The \$100,000 study was recently completed and distributed to the thirty communities which participated in the consultant's analysis.

The study found that rusty water was caused by corrosion and bacteria in low-flow sections of community distribution pipes. MWRA water is frequently "highly aggressive" which results in iron leaching into the water from the pipes. In addition, bacteria was found to be nestled in the encrusted sections of pipe walls where disinfectants are unable to penetrate. The metabolic activity of these bacteria is believed to increase pH which results in even more color and turbidity added to the water.

To resolve the problem, the study offers these recommendations to affected communities: "The most effective control alternative which would eliminate both the source of iron and the bacteria is the cleaning and lining of mains in the problem areas. Cleaning of the mains would remove tuberculation which serves as a secondary source of iron and a breeding ground for bacteria. Lining of the currently unlined iron pipes with cement would limit further pipe corrosion, thus reducing the primary source of iron in the system. Also, the looping of mains to eliminate dead-ends and the use of a flushing program would control particulate material that tends to accumulate in the system. Although cleaning and lining of the mains is an expensive alternative, it is most certain to mitigate the present problem."

#### MWRA NEGOTIATES TO EXCHANGE WATER WITH NEEDHAM AND WELLESLEY

Nearly ten years ago, officials from Needham and Wellesley approached the MDC with the proposition: "During some seasons we have surplus water available in our wells. We don't need the additional water but you do. Are you interested in buying water from our towns during these periods in order to reduce withdrawals from your reservoir system?" Despite the apparent sensibility of the idea, the MDC didn't consider the Towns' offers seriously.

But now the MWRA, reflecting a new conservation philosophy, has expressed strong interest in the concept and has begun negotiating agreements with the Towns to make such water exchanges possible. At a recent MWRA water policy committee meeting, Board of Director Jonathan Souweine drew a chuckle from the crowd when he addressed Bruce Nagler of Needham and Pat Berdan of Wellesley: "This sounds great, and I really appreciate that both of you hung on for ten years. And I particularly want to thank the MDC for leaving us this tremendous opportunity--if they had solved all these problems what would there be for us to do?"

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## CONSULTANTS RECOMMEND PIPE IMPROVEMENTS TO SOLVE RUSTY WATER

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According to John Shawcross, Director of the MWRA's Water Engineering Department, buying surplus water from communities through simple interconnections "makes the most efficient use of the combined MWRA/community water systems, utilizing the strengths of our system to combine with the strengths of community systems, in order to generate in total more water than we can produce independently." He estimates that the MWRA would be able to obtain an additional 400 million gallons per year via this arrangement.

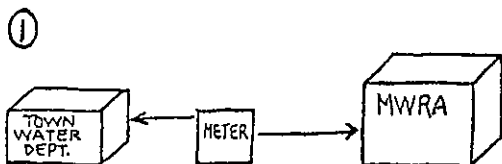
DATA FROM MASTER METERS WILL SOON BE ACCESSIBLE TO COMMUNITIES

The MWRA is currently designing plans to equip most of its master meters with telemetry, which would automatically transmit meter data to a central computer. The Water Meter Modernization Program, managed by Charles Zimmerman, will eliminate the need to read each meter manually, and will provide the MWRA with continuous information on water flows and pressures for thirty-five communities. In addition, the Program will allow communities in the metropolitan area the opportunity to hook-up to the telemetry system and receive expanded access to flow and pressure data. Such information may prove useful in tracking unaccounted-for water, detecting main breaks, and monitoring flow conditions in the distribution system.

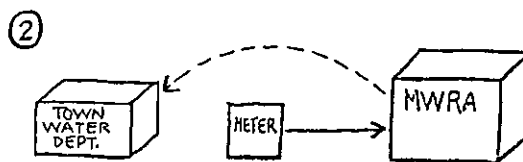
In most cases, the MWRA plans to install the meter telemetry apparatus above-ground, in protected boxes on sidewalks near the meter sites. Consultants are now in the process of visiting communities to identify potentially suitable locations for the boxes, and Mr. Zimmerman intends to work closely with community officials to assure that the positioning of boxes is acceptable to each municipality.

To appropriately design and construct the telemetry equipment at each master meter site, the MWRA's consultants will need to know whether the host community desires some sort of hook-up to the meter or to the MWRA's computer. To gain a preliminary sense of whether communities are interested in increased access to data, Mr. Zimmerman has distributed a survey to a number of local water superintendents, asking about the kinds of information they might want from the MWRA in the future. Water managers are advised to note that the survey is only a survey, and that responses do not bind communities to any particular telemetry system hook-up. At a later time communities will receive more information about extra costs and will be given the chance to formally choose a desired arrangement.

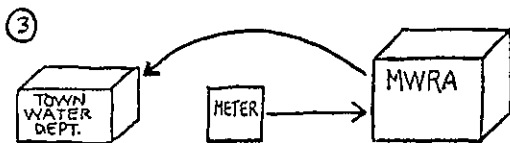
The potential types of meter data access that will be offered to communities are depicted and briefly described below:



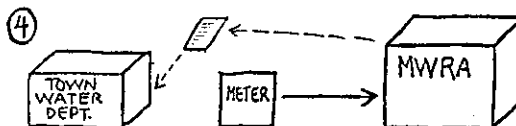
① This most basic telemetry option has a direct wire connecting the meter data to the local water office. Pressure and flow readings, and alarm conditions at the specific meter can be known.



② This advanced option allows the town's computer to "call" the MWRA's computer when data is desired. Information on the entire system can be requested. This option is suitable for most needs and can be combined with the direct wire option.



③ This deluxe hook-up has a permanent line connecting the MWRA's computer to the town's computer. Real-time data and stored data on conditions anywhere in the metro system can be accessed 24 hours a day. This option will be the most expensive for communities.



④ This is the current level of service where water usage reports are intermittently mailed by the MWRA to the community. These "hard copy" reports provide information on flows and pressures for the previous period.

## NEWTON MAYOR, BROOKLINE SELECTMAN OFFER ADVICE TO MWRA

In statements made at the Advisory Board's recent public hearing on the MWRA budget, two elected officials offered these bits of advice concerning MWRA water...

On the algae problem... Newton Mayor Theodore Mann said a need exists to provide greater assurance to citizens that water is safe to consume. He requested that the MWRA set up a program to perform additional water testing in public settings within communities, "so that we can give that kind of satisfaction and knowledge to the people in our communities." He also suggested that the MWRA accelerate its plans to meet the Safe Drinking Water Act regulations by constructing a filtration plant at Wachusett Reservoir as soon as possible. Such a plant would effectively remove tastes and odors from the water supply.

On water conservation information... Martin Rosenthal, Chairman of the Brookline Board of Selectmen, said the MWRA "should greatly escalate its efforts to encourage water conservation," and added, "I am not satisfied with what I am seeing in the material relative to conservation." He suggested better public relations "packaging" and a more aggressive mass media campaign. He said the MWRA should rely less on explaining things technically, and more on catchy slogans and ways to make users aware of the price associated with water consumption.

## NEWS FROM STATE WATER SUPPLY COMMISSIONS

The Water Resources Commission (WRC) is advising cities and towns to gear up for implementation of the Water Management Act and to designate one person in the community as the Local Water Resource Management Official. This official is to be responsible for coordinating the development and implementation of local water resource management and conservation plans. The WRC suggests three options for filling this position: 1) designate a current official or employee, 2) hire a water conservation professional, or 3) share a professional with a neighboring city or town. While the Water Management Act affects only those communities with local water sources, other communities may want to consider using the idea of hiring a water conservation professional to help implement new water policies and programs.

The Special Legislative Commission on Water Supply has filed a package of eight proposed bills for the 1988 agenda, including five unpassed bills from last year and three new initiatives. The emphasis of the proposed legislation is on proactive measures to avoid future water supply problems.

## MWRA TARGETS WATER SAVINGS IN THE INDUSTRIAL SECTOR

To improve water-use efficiency in industries, businesses, and institutions, the MWRA has started a program to advise non-domestic water users on ways to run their operations on less water. The firm of Pequod Associates has been selected to perform 40 water audits among large users, to prepare informational materials and manuals on how industries in other parts of the country save water, and to teach MWRA staff how to do water audits.