



CITY OF CAMBRIDGE

MASSACHUSETTS

WATER DEPARTMENT
250 FRESH POND PARKWAY
CAMBRIDGE, MASS. 02138

John J. Cusack, Jr.
Superintendent

617-498-9070

TO: Robert W. Healy
City Manager

FROM: John J. Cusack, Jr.
Superintendent

A handwritten signature in dark ink, reading "John Cusack", is written over the printed name and title of the sender.

DATE: November 23, 1988

SUBJECT: COUNCIL ORDER NO. 18 - (4-25-88) - WATER CONSERVATION PLAN

In response to your April 29, 1988 Council Order on the subject referenced above, please be advised that the Water Department has reviewed this item and is submitting this progress report.

Background

The Cambridge Water Department (C.W.D.) is required by the Massachusetts Water Resources Commission (W.R.C.) and the Massachusetts Department of Environmental Quality Engineering (D.E.Q.E.) - Division of Water Supply to develop a comprehensive "water conservation plan" as part of an overall water resources management program. In addition to these regulatory agencies, the Massachusetts Water Resources Authority (M.W.R.A.) also requires its partially supplied contract communities to have a water conservation public information and evaluation program for all water users.

Water Conservation Plan

The C.W.D. is preparing an updated Water Conservation Plan to conform with the revised requirements of the W.R.C. and the D.E.Q.E. A draft copy of the new Water Conservation Plan is attached for your information. This draft version has been prepared in accordance with the guidelines of the Massachusetts Executive Office of Environmental Affairs (E.O.E.A.).

Component D3 - "Public Education" is the portion of the Water Conservation Plan that applies to the objectives identified in the council order

Water Department staff members have met with representatives of the Community Development Department and the Human Services Department to consider options available for a public information program. The preliminary opinion of this group is to develop a water conservation public education plan, consisting of three components as follows:

Memo

Robert W. Healy,
City Manager

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November 23, 1988

1. Water Conservation Kits
2. Cable TV Presentations
3. Water Resources Curriculum in the School System.

The "Water Conservation Kit" would consist of a special envelope/package that can be mailed or distributed at public buildings. This kit would include:

- a) Indoor/Outdoor Water-Saving Tips
- b) Water Conservation Literature
- c) Dye Tablets for Testing Toilet Tanks
- d) Cost Information on Reduced Flow Plumbing Items

The estimated cost for producing these Kits is \$2.00 to \$3.00 per unit, depending on quantities. (Note: samples of items to be included in Kit are available at the Water Department).

The "Cable TV Presentations" of water conservation information can be included with other information applicable to the Cambridge water system. The use of television to provide information can demonstrate how to check water pipes and toilets for leakage, how to install low flow shower heads and sink aerators, how to water landscaping, etc.

The concept of "Water Resources Curriculum in the School System" has been discussed with several interested science teachers in the Cambridge School Department. The M.W.R.A. Public Affairs Office and the Museum of Science have expressed a willingness to develop this curriculum.

Summary

As stated above, the Cambridge Water Department is currently preparing an updated Water Conservation Plan to meet the requirements of the Water Resources Commission and the Department of Environmental Quality Engineering. Public information and education on water conservation must be included as part of the overall plan. It is the intention of the Water Department to promote water conservation through the use of water conservation Kits, cable TV presentations, and water resources curriculum in the School System.

JJC/mp

Attachment



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617-498-9070

"WATER CONSERVATION PLAN"

DRAFT

Preamble

The City of Cambridge has a limited supply of water to meet the demands of its residential, commercial, industrial and institutional customers. There is no immediate danger of the Water Department being unable to meet these consumption demands except during an extended drought period, or during the aftermath of a contamination incident within the reservoir system. The water supply system of the City can be supplemented with water purchased from the Massachusetts Water Resources Authority (M.W.R.A.) during periods of emergency conditions.

Conservation Goal

The specific goal of the Cambridge Water Department "water conservation plan" is to maintain an adequate supply of high quality water for all its customers and to minimize the amount of water purchased from the M.W.R.A. Additional objectives include: reducing the average daily summer demand, reducing the average annual usage for all existing customers, and eliminating the need for developing new sources of water supply. These goals and objectives can be achieved most effectively through a combination of a "supply management program" and a "demand management program".

Supply Management Program

This on-going program has been designed to improve the efficiency and reduce "unaccounted-for water" within the production and delivery systems. It is not dependent on the response of water users. Typical

components of a "supply management program" are listed below, along with information applicable to the Cambridge Water Dept. (C.W.D.).

S1 - Metering

The C.W.D. maintains water meters in all residential, commercial, industrial, and institutional buildings. Water bills are issued semi-annually.

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S2 - Leak Detection & Repair

The C.W.D. repairs service connection leaks and water main breaks on a routine basis. A system-wide sonic listening survey for underground leaks was conducted in 1984.

S3 - Pressure Reduction

Since 1980, all water processed at the Water Treatment Plant has been pumped directly to the elevated storage/distribution reservoir at Payson Park in Belmont. The water returns to Cambridge by gravity flow, which produces a distribution system pressure range of 52 to 56 p.s.i. Prior to 1980, water had been pumped directly into the distribution system, which resulted in a higher system pressure in the 60 to 65 p.s.i. range. By reducing system pressure, the flow available from sink faucets and outside hose connections is reduced accordingly.

S4 - Watershed Protection

Since 1979, the C.W.D. has employed a full-time Manager of Water Resources to implement and control watershed management techniques that will protect the quality of existing supplies and maximize the recharge flows into the three reservoirs.

S5 - Evaporation Suppression

This program is not considered cost-effective in this geographical region; consequently, it is not applicable for Cambridge.

Demand Management Program

This program can be designed to achieve immediate water use reduction, and it is quite dependent on the response and co-operation of

of the water users. Typical components of a "demand management program" are outlined below, along with information on their status in Cambridge.

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D1 - Pricing

The C.W.D. historically as charged for water based on a uniform flat rate pricing structure. In response to an increasing need for water conservation and a limited amount of supply, the Department recently completed a Water Rate Study that evaluated a pricing structure based on an increasing block rate structure. This form of a rate structure provides the greatest incentive for water conservation.

D2 - Regulation

This program can be used to achieve immediate, short-term water conservation. Regulations can be in the form of "voluntary" or "mandatory" restrictions of outside use of water (i.e. car washing, irrigation, spray fountains, etc.), and in the form of mandatory water conservation requirements for plumbing fixtures, once-thru cooling water, and flow restriction limits on household appliances.

D3 - Public Education

This program must be specific to the City of Cambridge, which is a large urban area. Methods available for water conservation education include: bill inserts, pamphlets, newsletters, school programs, television, and direct customer assistance. Because many residents of Cambridge do not receive an actual water bill, the City cannot rely on bill inserts. Methods of public information more applicable to Cambridge are water conservation kits, television, and school curriculum.



City of Cambridge
Department of Human Service Programs
51 Inman Street, Cambridge, Massachusetts 02139, 498-9076

MEMORANDUM

TO: Robert W. Healy, City Manager

FROM: Jill Herold, Assistant City Manager, DHSP

DATE: November 23, 1988

RE: City Council Order of April 25, 1988 for a Water Conservation Plan

In response to City Council Order of April 25, 1988 concerning water conservation, a meeting was held with Kathy Mitchell, Fuel Assistance Director from Human Services, Ken Nathenson from Community Development and John Cusack from the Water Department. It was agreed in the meeting that the Department of Human Services, through the Fuel Program, Community Schools and the Council on Aging, would assist in outreach and the distribution of any educational information or conservation materials that Community Development and/or the Water Department might prepare.

DIVISIONS:

Childcare
498-9076

Community Learning Center
547-1589

Community & Youth
498-9037/9072

Council on Aging/Elderly Services
498-9039

Low Income Fuel Assistance
498-9038

Planning & Development
498-9076

Recreation
498-9028

OFFICE OF THE CITY MANAGER

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CITY OF CAMBRIDGE

CAMBRIDGE, MASSACHUSETTS 02139
TEL. 498-9011

EXECUTIVE DEPARTMENT
ROBERT W. HEALY
City Manager

RICHARD C. ROSSI
Deputy City Manager

November 28, 1988

To the Honorable, the City Council:

In response to the City Council's request at the meeting of November 21, 1988 for an updated report on Water Conservation measures in addition to the Adoption of an ascending block rate structure, I submit the enclosed reports.

Very truly yours,

A handwritten signature in dark ink, appearing to read "Robert W. Healy", is written over a horizontal line.

Robert W. Healy
City Manager

RWH/mbf
Enc.

Agenda Item No. 6 *F-532*

Re: response to the the Council's request for
an updated report on Water Conservation measures
in addition to the adoption of an ascending
block rate structure.

In City Council,

November 28, 1988

11-28-88

Referred to the Hearing