



Ralph E. Dunphy
Commissioner

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To: Robert W. Healy
City Manager

From:  Ralph E. Dunphy
Commissioner

Date: March 25, 1998

Subject: Council Order #054, dated 3/2/98
Re: Report on the Progress toward a
Swimmable Charles River

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OFFICE OF THE CITY MANAGER

The City of Cambridge entered into a Compliance Order with the United States Department of Environmental Protection in 1996 together with other Charles River communities with the goal of making the Charles River both fishable and Swimmable by Earth Day, 2005. The major focus of this effort thus far has been to remove all sewer discharges from the City's storm water system and thus prevent sewage entering the river from the various stormwater outfalls along the river front.

The Department of Public Works has identified the catchment areas associated with the major outfalls and has examined each for contamination. Once contamination has been confirmed at a given outfall dye tests, smoke testing and TV surveys have been conducted so as to isolate those properties incorrectly connected to the City's storm system. Thus far approximately one and a half thousand (1,500) buildings have been dye tested and one hundred and nineteen (119) properties have been identified as being illicitly connected to the storm pipes. Of the one hundred and nineteen (119) properties with illicit connections eighty five (85) have had their connections corrected. The remainder will be corrected before June 30, 1998. Correcting illicit connections involves pinpointing the exact connection location of the building service pipe and the City main. This is done either from an examination of our records, or by examining the internal plumbing or by sending a video camera through the pipe. Once found the street is then excavated and the connection is removed from the storm pipe and redirected to the sewer line and then the sidewalk and street are backfilled and reinstated to their former condition. To state that by thus removing all illicit connections from the City's storm system will render the City's storm pipes free from domestic pollution is to oversimplify the situation as it exists within the City of Cambridge's storm and sewer network. However, the delineation of catchment areas and the subsequent identification and removal of illicit connections is a pivotal first step towards restoring the integrity of the City's storm system.



The City of Cambridge storm and sewer network is an old, and complex system that in many areas is structurally and hydraulically challenged. One of the major complexities of the system are common manholes. There are areas in the City where the storm system lies directly above the sewer system and they share common access points. At these common access points or common manholes the sewer system is separated from the storm system by separation plates that have to be lifted in order to gain access to the sewer pipe. There are approximately four hundred such manholes within the City. The impact of these manholes, especially those where the separation plates are either missing or ajar is three fold, firstly, during smaller storm events all rainfall water drops through to the sewer system and eventually to the MWRA, secondly, during more intense wet weather events flow may mix at the common manholes (sewage and stormwater) with some mixed flow going to the MWRA lines and the rest going to the river and thirdly, if there is a back up in the sewer line then sewer flow will eventually back up into the storm line and will flow through it to the river.

A full survey of all these manholes will be completed by May 15th of this year. This survey began in July 1997 and has examined the manholes with respect to the existence or not of separation plates, their condition, whether or not there was flow in the storm lines during dry weather conditions and the structural condition of the manhole itself. Those manholes where the potential for contamination to the receiving waters was perceived as greatest were immediately examined and the plates were either reinstated or repaired. For the Eliot Street- JFK Street Storm drain system where sewage flows have been noted discharging from the storm outfall, all common manholes have been removed from the catchment as have all illicit connections. This construction activity has rendered this catchment area entirely separate. It is our intention to remove all those common manholes that can be removed during the next several years. The first contract addressing this will begin early this summer. The removal of these common manholes or the elimination of the possibility of hydraulic communication between the storm and sanitary pipes at common manholes is imperative for the success of the City's effort in ensuring a Swimmable and fishable Charles River.

In that the system is hydraulically complex considerable energy is being spent surveying pipe systems examining hydraulic structures and metering sewerage and storm water flows. New maps have been developed for the City's storm and sanitary catchment areas and of the locations of common manholes. These maps allow a greater appreciation of hydraulic occurrences and enable better design decisions to be made specifically with regard to the prioritization of the removal of common manholes.

Obviously, the removal of illicit connections and common manholes will not in themselves guarantee a pollutant free storm water discharge from the City of Cambridge to the Charles River. In order to ensure such, a storm water plan has been drafted for the City and it speaks to all issues concerning runoff and

discharge management to fresh water outfall bodies such as the Charles River, the Alewife Brook, the Little River and Fresh Pond.

As part of the Storm Water Management package, new City ordinances are being prepared for Council approval, that speak explicitly to storm water. New design and permit standards are being prepared so that consultants, contractors, City inspectors and administrators all understand the importance of storm water related issues as they pertain to the water quality of the Charles River.

Maintenance standards and methods are also being reviewed as part of the new Storm Water Management package. The City is investing in a Integrated Information Management System (IIMS) that will facilitate an efficient proactive operations and maintenance program to be developed and managed.

Finally the Department of Public Works is moving ahead with the major sewer separation projects for North Massachusetts Avenue (CAM002), Fresh Pond, Huron, Concord Avenue (CAM004) and Kirkland Street/Oxford Street (Phase VI Contract 3). These projects when complete will have the twin results of lessening sewerage discharge to fresh water receiving bodies and reducing flows to the MWRA treatment facility.

The Department of Public Works is continuing to work with the Federal Environmental Protection Agency, The Massachusetts Department of Environmental Protection, the Massachusetts Water Resources Authority, The Charles River Watershed Association, and City residents such as Roger Frymire so as to ensure every effort is made so as to guarantee a Swimmable and fishable Charles River by Earth Day, 2005.

For greater detail concerning all of the above the following reports are available and will allow a more detailed appreciation of the work that has been done, that which remains to be done and the commitments the City is making so as to ensure that everything is done to ensure that the Charles River and all other Rivers in and around Cambridge are properly protected and are fishable and Swimmable by the year 2005.

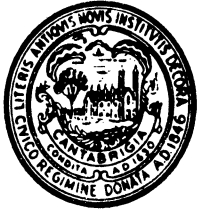
The EPA February 1996 Report

The EPA August 1996 Report

The Supplemental Information Package for the Draft Stormwater Management Report January 1997.

The DEP Status Report March 1997.

cc: Steve White, DPW Deputy Commissioner
Ann Daughaday, City Engineer



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EXECUTIVE DEPARTMENT
ROBERT W. HEALY
City Manager

RICHARD C. ROSSI
Deputy City Manager

March 30, 1998

To The Honorable, The City Council:

Please find attached a response to Awaiting Report Item No. 16, regarding a report on the progress toward a swimmable Charles River, received from Public Works Commissioner Ralph Dunphy.

Very truly yours,

Robert W. Healy
City Manager

RWH/mec
Attachment

Consent Agenda #7

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Relative to a report on the progress
toward a swimmable Charles River.

In City Council March 30, 1998

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