



# Charles River Pollution Control District

Franklin · 1973 · Medway

September 4, 2025

George Papadopoulos  
U.S. Environmental Protection Agency  
5 Post Office Square, Suite 100 (06-4)  
Boston, MA 02109-3912  
Email: [papadopoulos.george@epa.gov](mailto:papadopoulos.george@epa.gov)

Jennifer Wood  
MA Department of Environmental Protection  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Email: [jennifer.wood@mass.gov](mailto:jennifer.wood@mass.gov)  
[Massdep.publiccommentnpdes@mass.gov](mailto:Massdep.publiccommentnpdes@mass.gov)

RE: Supplemental Comment on NPDES Draft Permit MA0102598  
Charles River Pollution Control District (Water Pollution Abatement Facility - MA0102598) and  
Co-Permittees (Town of Franklin - MAC012598; Town of Medway - MAC022598; Town of  
Millis - MAC032598; Town of Bellingham - MAC042598), Medway, MA

Dear Mr. Papadopoulos and Ms. Wood:

The Charles River Pollution Control District (the “District”) respectfully submits the below comments to supplement the District’s January 30, 2025 comment letter on the draft National Pollutant Discharge Elimination System (“NPDES”) permits issued by EPA on December 16, 2024 and MassDEP on December 20, 2024 (collectively, the “Draft Permit”) for the District’s Treatment Facility (the “Facility”). Although the District recognizes that the comment period for the Draft Permit has closed, it is within EPA and MassDEP’s discretion to consider and include these supplemental comments in the administrative record. Inclusion of this supplemental letter is appropriate because the comments relate directly to the subject matter of the District’s timely submitted comments and memorialize and clarify recent discussions between MassDEP and the District.

The comments below and documents attached provide historical context regarding the prior permitting and design of the Facility, and supplement the District’s comment (Comment #1 in the January 30, 2025 Comment Letter) regarding removal of the 4.5 million gallon per day (“mgd”) summer flow limit proposed in the Draft Permit. Specifically, this additional information confirms that the increase in the design capacity of the Facility from 4.56 mgd to 5.7 mgd in 2000 did not require an antidegradation study (and did not increase waste load from the Facility) because the loading limits for the upgraded Facility remained compliant with existing permit limits and waste load allocations as a result of existing treatment efficiencies or upgrades included in the design of the upgraded Facility for the increased flow. Further, communications between MassDEP and the District prior to 2000 show that the parties understood that the increased capacity would be (and was) designed to maintain previously permitted waste load allocation and permit limitations. It was because of these assurances and requirements that the District went forward with the needed upgrade to 5.7 mgd.

Based on this information, as well as what was provided in the January 30, 2025 comment letter, the District again requests that the summer 4.5 mgd limit be removed and all reasonable potential and other calculations be recalculated using the Facility’s design capacity of 5.7 mgd as required by 40 C.F.R. § 122.45(b)(1). The effluent and load limitations presented in Exhibit B of the January 30, 2025 comment letter for the 5.7 mgd design capacity should then be incorporated into the final permit.

## Supplemental Comment

The District owns and operates the Facility and an interceptor system, serving approximately 7,600 residents in the Town of Franklin, 2,800 residents in the Town of Medway, 1,250 residents in the Town of Bellingham and 1,400 residents in the Town of Millis. Prior to 2000, the Facility's permitted flow was 4.56 mgd, which reflected the Facility's then current design capacity. However, as early as 1995, MassDEP and the District understood that anticipated growth required additional capacity in the Facility. This is acknowledged by MassDEP in a 1995 Administrative Consent Order, requiring the District to evaluate future flow projections for the Facility and submit such evaluation and schedule for upgrading the Facility to MassDEP (See Administrative Consent Order No. ACO-CE-95-1001, Paragraph 10, attached as Exhibit A).

In response to the 1995 Administrative Consent Order, the District's consultant (Camp Dresser & McKee) prepared a report entitled "Charles River Pollution Control District Phase IA Facilities Plan" to address the future flow evaluation requested by MassDEP. MassDEP's comments (Exhibit B) on this report included that:

The permitted mass loading from the facility can not be increased. Therefore increasing the permitted flow from 4.54 to 6 mgd will cause the NPDES permit effluent concentration limits to decrease proportionally. Thus the current BOD limit of 7 mg/l will decrease to 5.5 mg/l. The plan must address the need to improve treatment efficiency as part of any expansion.

Thus, as early as 1995, MassDEP had already indicated that the current waste load allocations could not be increased by the additional flow and that the Facility's upgrade would need to include treatment efficiencies to reduce waste loads to comply with preexisting permit limits. MassDEP reiterated this prerequisite to the Facility's expansion in its April 26, 1996 response to the District (Exhibit C) by acknowledging that:

[MassDEP] had previously reviewed a report prepared on the District's behalf by Camp Dresser & McKee (CDM) titled "Charles River Pollution Control District Phase IA Facilities Plan September 1995". [MassDEP's] comments on the report were forwarded in a letter dated November 8, 1995. CDM responded to [MassDEP's] comments in a letter to the District dated December 29, 1995. The Department concurs with CDM's comments and the proposed upgrade of the facility to 5.7 MGD with the design criteria based on the current NPDES permit waste load limits.

In the April 26, 1996 letter, MassDEP stated in no uncertain terms that the waste load capacity of the receiving stream (the Charles River) was fully allocated, with no reserve capacity withheld. Thus, for MassDEP and EPA to allow an increase in an existing discharge, the permittee must show "no increase in the permittee's current waste load allocation." (See Exhibit C, at page2).

As a result of the above communications, the District moved forward with the design of the Facility upgrade with the intent to improve treatment to maintain compliance with preexisting permit requirements. The substantial cost of the upgrade was needed to allow for continued growth in the member communities, but was justified by the above understanding that the Facility could increase flow in tandem with increased treatment and efficiency to maintain permit waste load limits. In moving forward with the Facility upgrade, the District relied upon:

- The conclusion that the existing Facility was operating more efficiently than the original design anticipated: “After reviewing the records of how the treatment plant has been operated over the last sixteen or seventeen years, it was determined that the efficiency of treatment was better than what the original design predicted. Therefore, DEP would be able to increase the flow from 4.54 mgd to 5.7 mgd without increasing any load into the Charles River.” (See January 9, 1997 District Meeting Minutes at page 2, attached as Exhibit D);
- CDM’s design for the upgraded Facility was based on the expectation “that the proposed modifications will improve the treatment process so that the increase in capacity will not result in the discharge of contaminants in the effluent above the currently permitted National Pollutant Discharge Elimination System (NPDES) limits.” (See CRPCD Water Pollution Abatement Plan, amended October 1997, at page 2, attached as Exhibit E); and
- The Secretary of Environmental Affairs (April 9, 1997) and MassDEP (February 3, 1998) approved the plant modification with the restriction that the increase in capacity will not result in the discharge of pollutants above the currently permitted NPDES limits (See November 13, 1998 CDM Letter regarding Capacity Allocations, at page 2, attached as Exhibit F).

As stated in the January 30, 2025 comment letter, following coordination and discussions with EPA and MassDEP, including the above, the permitted design capacity was increased to 5.7 mgd in 2000. The District requested during the public comment period on the 2000 draft NPDES permit that the design capacity of 5.7 mgd not be used in calculating the dilution factor during the **term of that permit** and instead use an average summertime flow of 4.5 mgd. The continued use of the 4.5 mgd flow limit in summer months that was implemented in the 2000 NPDES permit was not to limit waste load, but because the District could not use the full design capacity of 5.7 mgd until at least 2015 (the discussion of the 2000 NPDES permit terms regarding flow can be found in Attachment A in the Response to Public Comment from the District’s Draft 2000 NPDES permit starting on page 2 (attached as Exhibit A to the January 30, 2025 Comment Letter).

Without restating all of the arguments presented in the January 30, 2025 comment letter, the District reiterates that matching the flow limit for the Facility’s designed and approved 5.7 mgd capacity does not create an antidegradation concern. The Draft Permit uses the 5.7 mgd design capacity in calculating reasonable potential (See Comment 2 to the January 30, 2025 comment letter). Because the dilution factor would decrease with the application of the 5.7 mgd design capacity, the applicable effluent limits for total residual chlorine (TRC) and C-NOEC would then be adjusted in a final permit to reflect the removal of the summer flow limit. No other changes to the limits in the Draft Permit would be required because the load limits for total suspended solids, cBOD and ammonia would continue to be calculated on the historic capacity (4.56 mgd) as contemplated in the communications and approvals discussed above and which the District is not seeking to increase. Finally, the copper, ammonia, and phosphorus WQBELs would not change because the reasonable potential analysis prepared by EPA in Appendix B of the Fact Sheet uses the 5.7 mgd design flow. The proposed TKN limits would also not change because EPA based the limit on the 1976 WQMP, which the District does not agree with (See Comment 4 to the January 30, 2025 comment letter). As shown in Exhibit B to the January 30, 2025 comment letter, which analyzes the proposed effluent limitations using both a 4.5 mgd and 5.7 mgd flow limitation, there is no antidegradation issue because the effluent and load limits either do not change or can be adjusted, in the case of TRC and C-NOEC.

Based on the above and the January 30, 2025 comment letter, the District requests that the summer 4.5 mgd limit should be removed and all reasonable potential and other calculations should be recalculated

using the Facility's design capacity of 5.7 mgd as required by 40 C.F.R. § 122.45(b)(1). The effluent and load limitations presented in Exhibit B for the 5.7 mgd design capacity should then be incorporated into the final permit.

The District appreciates EPA and MassDEP's consideration of these supplemental comments. The District looks forward to working with EPA and MassDEP on the above issues to develop a final permit that is protective of the Charles River while being sustainable for the District, its member towns and ratepayers. Should you have any questions on the above, please call my office at 508-533-6762.

Sincerely,



Elizabeth Taglieri, P.E.  
Executive Director

Ecc: Ken Moraff, EPA Region 1 (moraff.ken@epa.gov)  
Michael Cobb, EPA Region 1 (cobb.michael@epa.gov)  
Lealdon Langley, MassDEP (lealdon.langley@state.ma.us)  
Robert Cantoreggi, Franklin Director of Public Works  
Peter Pelletier, Medway Director of Public Works  
Jesse Riedle, Bellingham Director of Public Works  
James F. McKay, Millis Director of Public Works  
Matthew Snell, Nutter McClennen & Fish  
Jane Madden, CDM Smith

**EXHIBIT A -  
Administrative Consent Order No. ACO-CE-95-1001  
[Attached]**

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF WATER POLLUTION CONTROL

\*\*\*\*\*

IN THE MATTER OF THE \*  
CHARLES RIVER POLLUTION \*  
CONTROL DISTRICT \*

\*\*\*\*\*

ADMINISTRATIVE CONSENT ORDER  
NO. ACO-CE-95-1001

THE PARTIES

- 1) The Department of Environmental Protection ("the Department") is a duly constituted agency of the Commonwealth. The Division of Water Pollution Control ("the Division") is a division within the Department. The Division maintains its principal offices at One Winter Street, Boston, Massachusetts 02108, and a regional office at 75B Grove Street, Worcester, Massachusetts 01605. The Division is established by and responsible for implementing the provisions of the Massachusetts Clean Waters Act, G.L. c.21, §§26-53.
- 2) The Towns of Franklin and Medway formed the Charles River Pollution Control District ("the District") in 1973 pursuant to Chapter 21 of the General Laws. The District presently treats flows from the Towns of Millis and Bellingham under the terms of contracts.

STATEMENT OF FACTS

- 3) The District owns, operates and maintains a wastewater treatment facility ("the Facility") at 66 Village street in Medway. The District is authorized to discharge up to 4.54 MGD of treated wastewater to the Charles River under the terms of a discharge permit (MA0102598) issued jointly by the Division and the United States Environmental Protection Agency (EPA). Each municipality served by the District independently owns, operates and maintains its own sewerage system which collects and transports sewage and other wastewater to the Facility.

page 2

- 4) Facility operating records indicate that the District periodically exceeds prescribed effluent limits for a number of regulated parameters, including monthly average daily flow, Biochemical Oxygen Demand (BOD) and total suspended solids (TSS). The reasons for these exceedances include excessive amounts of infiltration and inflow (I/I). Recent studies by the District's engineering consultant indicate that the Facility receives pollutant loadings that approach or exceed the Facility's design capacity. Unless corrective actions are implemented these exceedances will increase in frequency and severity.
- 5) For the reasons set forth above, and pursuant to the authority granted to the Division and the Department under G.L. c.21 §§ 26-53, G.L. c. 83 § 7, and the regulations promulgated thereunder, the Division, the District and communities served hereby enter into this civil administrative consent order (the "Consent Order"). The District and the communities served hereby consent to this Consent Order and waive their rights to an adjudicatory hearing, a tentative decision and judicial review of this Consent Order and to notice of any such rights of review. This Consent Order shall be binding on the District and communities served and on their successors, heirs and assigns.

DISPOSITION AND ORDER

The District and the communities served shall establish a program to eliminate violations of effluent limits and to reduce extraneous and/or unpermitted flows and organic overloading now entering the sewerage systems served by the District's Facility. In carrying out this program the District and the communities agree to the following corrective actions:

- 6) Within sixty (60) days of execution of the Consent Order, the District and the communities served shall submit to the Division for its review an executed agreement whereby each community served delegates to the District final approval authority for sewer extension and connection permits issued to sewerage systems tributary to the District Facility. Under this arrangement individual sewer applications would first be reviewed by the municipalities and, if acceptable, then be forwarded to the District. The District would then either approve or deny the application and maintain comprehensive records of all applications received and permits approved.

MEDWAY-Administrative Consent Order  
ACO-CE-95-1001  
Sewer Moratorium

page 3

- 7) Within sixty (60) days of execution of the Consent Order, the District and communities shall submit to the Division for its approval a proposed schedule for conducting an I/I analysis and sewer system evaluation survey for each community served. The schedule shall include:
- (a) Inspection of all manhole covers and seals not inspected in the previous 12 months for excessive infiltration and inflow.
  - (b) Evaluation of sewers for cracks, leaks, breakage and blockage.
  - (c) Identification and removal of illegal connections to the sewer system, to include sump pumps and roof drains.
  - (d) Evaluation of BOD and TSS loadings from the community to the Facility and any suggestions for decreasing the load contribution.
  - (e) Submittal to the Department for its review of a summary report of conclusions with a schedule of recommended actions, to include repair or replacement of specific sewers and manhole covers, and the estimated reduction in I/I flow (in gpd) each corrective action shall achieve.
  - (f) Upon the Department's approval of the recommended schedule in item (e), each community shall implement the approved corrective actions and notify the Division and the District when this action has been taken.
  - (g) Within a year of acceptance of the above schedule the community shall submit a progress report that summarizes the actions taken to date by each community.
- 8) Within 60 days of execution of the Consent Order, the District shall submit to the Division for its review a systematic tracking system for monitoring all new sewer permits issued to each community, all extraneous I/I removed by each community, the wastewater flows received from each community and the daily septage loadings (in terms of gallons received and the associated pounds of BOD and TSS) treated at the Facility. Upon Division approval the District shall thereafter submit to the Division a summary report on a quarterly basis, 15 days after the quarter ends (January 15, April 15, July 15 and October 15). The report shall

MEDWAY-Administrative Consent Order  
ACO-CE-95-1001  
Sewer Moratorium

page 4

document all permits issued with allotted flows and the amount of extraneous flows reported removed as of the reporting date.

- 9) Within two hundred seventy (270) days of execution of the Consent Order, the District shall submit to the Division an inventory of industrial users served by its Facility. The inventory will include a listing of the name and address of all industrial users, a description of the type(s) of manufacturing performed with standard industrial code (SIC), and an analysis of each industrial wastewater to include (at a minimum) flow, pH, BOD, TSS and any other pollutants associated with that type of activity.
- 10) Within sixty (60) days of execution of the Consent Order, the District shall submit an evaluation of future flow projections to the facility and a schedule for expanding and upgrading the wastewater treatment facility to treat projected future flows (including future septage treatment).
- 11) Within sixty (60) days of execution of the Consent Order, the District shall submit to the Division for its approval an evaluation of the current septage management at the Facility. Current practice is to introduce all septage into the process train within an eight hour period rather than distributing the loading over a longer period. The evaluation shall, at a minimum, evaluate the current septage storage capacity and the amounts of septage presently treated and what portion of the Facility's total treatment capacity the septage loading represents both in terms of gallons and pounds per day of BOD and TSS. The evaluation shall also evaluate methods to reduce the effect septage has on the facility's treatment capacity, to include increased storage and/or longer introduction time and pretreatment of septage.
- 12) Within sixty (60) days of Division approval of the septage evaluation submitted on behalf of item 11 above, if the evaluation shows there is a problem with the current septage handling procedures, the District will develop and submit an interim septage management plan.
- 13) The above actions are intended to return the District to compliance with the terms of its permit by September 30, 1997 when the District's current permit expires. A review will be conducted in September 1995 and again in September 1996 to determine if the District and the communities are progressing toward compliance. Should the Department

MEDWAY-Administrative Consent Order  
ACO-CE-95-1001  
Sewer Moratorium

page 5

determine at one of these review periods that the agreed to actions are not achieving a return to compliance sought, the Department shall notify the District of this determination in writing. Within thirty days of receipt of this determination the District shall proceed with more stringent actions, to include the possibility of the establishment of a moratorium, needed to eliminate further increases in pollutant loadings until additional treatment capacity is available.

- 14) This Consent Order shall apply to and be binding upon the District and communities, and their successors. The undersigned for the District and Communities represent that they have the authority to bind the District to this Consent Order. This Consent Order is hereby deemed entered and consented to as of the last date set forth below.
- 15) Each submission required by this letter shall be forwarded to:

James R. Fuller  
Regional Engineer  
Bureau of Resource Protection  
Department of Environmental Protection  
Central Region Office  
75B Grove Street  
Worcester, MA 01605

A copy of all submissions from the Town of Franklin shall also be forwarded to:

Robert Fagan  
Regional Engineer  
Bureau of Resource Protection  
Department of Environmental Protection  
Southeast Regional Office  
20 Riverside Drive  
Lakeville, MA 02347

A copy of all submissions from the Town of Millis shall also be forwarded to:

Sabin Lord  
Regional Engineer  
Bureau of Resource Protection  
Department of Environmental Protection  
Northeast Regional Office  
10 Commerce Way  
Woburn, MA 01801

MEDWAY-Administrative Consent Order  
ACO-CE-95-1001  
Sewer Moratorium

page 6

Nothing in this Consent Order shall be construed to limit the Commonwealth in seeking any remedy or civil or criminal penalty of up to \$25,000 dollars a day otherwise provided by the law for any misrepresentation or material omission by the District in any report or other submission required by this decree; or for failure to pay any stipulated penalties. The parties are agreed that any such misrepresentation or omission shall be deemed a violation of the decree and of Section 42 of the Massachusetts Act.

Nothing in this Consent Order shall be construed as, or operate as, barring, diminishing, adjudication or in any way affecting any legal or equitable right of the Department to issue any future Order with respect to the subject matter covered by this Consent Order, or in any way affecting any other claim, action, or demand which the Department may have with respect thereto. Nothing in this Consent Order shall in any way release the District from any civil or criminal liability, and specifically shall not limit, prevent, or in any manner affect the authority of the Commonwealth of Massachusetts to institute or prosecute any criminal action or procedure.

MEDWAY-Administrative Consent Order  
ACO-CE-95-1001  
Sewer Moratorium

page 7

THE COMMUNITIES

DEPARTMENT OF ENVIRONMENTAL  
PROTECTION

BY: Albert R. Buell  
Charles River Pollution  
Control District Chairman

BY: James J. O'Leary  
James R. Fuller  
Regional Engineer  
Bureau of Resource  
Protection

DATE: 6/30/95

DATE: 7/21/95

BY: [Signature]  
Town Council, Franklin

[Signature]  
Town Administrator, Franklin

DATE: \_\_\_\_\_

DATE: 6-30-95

BY: Raphael Lopez  
Selectmen Chairman, Medway

Sandra M. Rice  
Sewer Commissioner, Medway

DATE: 6/30/95

DATE: 7/3/95

BY: James J. McLaughlin  
Selectmen Chairman, Millis

Charles J. Argenzelli  
Town Administrator, Millis

DATE: 7/17/95

DATE: 7/17/95

BY: Angela Clemente  
Selectmen Chairman, Bellingham

DATE: July 7, 1995

**EXHIBIT B**  
**MassDEP Letter dated November 8, 1995**  
**[Attached]**



Commonwealth of Massachusetts  
Executive Office of Environmental Affairs

## Department of Environmental Protection

Central Regional Office

William F. Weld  
Governor  
Argeo Paul Cellucci  
Lt. Governor

Trudy Coxe  
Secretary  
David B. Struhs  
Commissioner

November 8, 1995

Robert D. McRae, Executive Director  
Charles River Pollution Control District  
66 Village Street  
Medway, MA 02053

RE: MEDWAY-DWPC-MA0102598  
ACO-CE-95-1001 item #10  
Future Flow Evaluation

Dear Mr. McRae:

The Department is in receipt of your September 19, 1995 letter regarding the District facility plan with the future flow evaluation and recommended actions as required by the Administrative Consent Order ACO-CE-95-1001. Item #10 of the ACO required the submittal of an evaluation of the future flow projections to the facility and a schedule for expanding and upgrading the wastewater treatment facility to treat the future flows.

A report prepared by Camp Dresser & McKee (CDM) titled "Charles River Pollution Control District Phase IA Facilities Plan, September 1995" was submitted as the flow evaluation for item #10 of the ACO. The Facility Plan first identified the existing flows and pollutant loads to the facility, and then projected what the flows and loads would be for the upcoming 20 years. Next, an evaluation of the treatment facility and all unit processes was done. The final step was to evaluate the options and make a recommendation.

The preferred recommendation was to reduce the existing loading to the facility from Garelick Farms and limiting the amount of septage received to only the sewered communities served. The required modifications to the facility for this plan would be to add an extra 1.25 mg of aeration capacity, and increase the number of sand filters.

The Department is in general agreement with the majority of the report but offers the following comments:

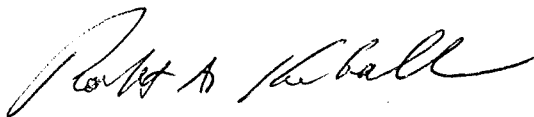
1. Although the daily amount of septage received over the course of the year averages 30,000 gpd, the actual amounts received during summer months approach 40,000 gpd, and often exceed 60,000 gpd on specific days.

75 Grove Street • Worcester, Massachusetts 01605 • FAX (508) 792-7621 • Telephone (508) 792-7650

2. The report assumes a BOD removal in the primary clarifier of 25%. Our review of monthly operator reports reveal the actual average BOD removal in 1995 has been 14%. Half the daily records show more BOD leaving the primary clarifiers than entering. Current operations must be improved if the assumed 25% removal rate is to be achieved.
3. The permitted mass loading from the facility can not be increased. Therefore increasing the permitted flow from 4.54 to 6 mgd will cause the NPDES permit effluent concentration limits to decrease proportionally. Thus the current BOD limit of 7 mg/l will decrease to 5.5 mg/l. The plan must address the need to improve treatment efficiency as part of any expansion.
4. The plan should also address septage holding capacity. Septage should be introduced more slowly over an extended period, not by 20,000 gallon increments in ten minute pump cycles. The drainage lines from the septage tanks should be changed if these are causing a problem.
5. The plan must also address the amount of sludge holding capacity. If the facility's permitted flow is increased, the amount of sludge holding capacity should be increased correspondingly. The current practice is to keep the sludge tanks near full to facilitate sludge removal. As a result there is little or no available storage capacity should inclement weather, holidays or some other event prevent routine removal of the sludge.

The above comments should be incorporated into the final plan. If you have any questions feel free to contact Margo Webber of my staff at (508) 792-7650 ext. 3738.

Very truly yours,



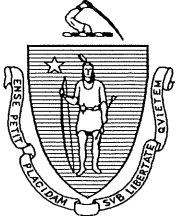
Robert Kimball, P.E.  
Regional Section Chief  
Division of Water Pollution Control

mw/flowinc.177  
cc: (next page)

MEDWAY-DWPC-MA0102598  
ACO-CE-95-1001  
Future Flow Evaluation  
Page3

cc: Donald DiMartino, Supt, DPW, 40 Blackstone St, Bellingham  
Wolfgang Bauer, Town Administrator, 150 Emmons St., Franklin  
Mark Flaherty, Supt Water & Sewer, 155 Village St, Medway  
Charles Aspinwall, Town Admin., 64 Exchange St, Millis

**EXHIBIT C**  
**MassDEP Letter dated April 26, 1996**  
**[Attached]**



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
CENTRAL REGIONAL OFFICE

WILLIAM F. WELD  
Governor

TRUDY COXE  
Secretary

ARGEO PAUL CELLUCCI  
Lt. Governor

DAVID B. STRUHS  
Commissioner

April 26, 1996

Albert R. Brunelli, Chairman  
Charles River Pollution Control District  
66 Village Street  
Medway, MA 02053

RE: MEDWAY-DWPC-MA0102598  
ACO-CE-95-1001 Item #10  
Future Flow Evaluation

Dear Mr. Brunelli:

This is in response to your January 4, 1996 and March 21, 1996 letters regarding item 10 of the Administrative Consent Order (ACO-CE-95-1001) requiring that the District submit an evaluation of future flow projections for the facility with a schedule for recommended actions to meet future treatment needs.

We had previously reviewed a report prepared on the District's behalf by Camp Dresser & McKee (CDM) titled "Charles River Pollution Control District Phase IA Facilities Plan, September 1995". Our comments on the report were forwarded in a letter dated November 8, 1995. CDM responded to our comments in a letter to the District dated December 29, 1995.

The Department concurs with CDM's comments and the proposed upgrade of the facility to 5.7 MGD, with the design criteria based on the current NPDES permit wasteload limits. The CDM recommended improvements include, at a minimum: (1) increasing aeration basin capacity by 1.25 MG, (2) adding two additional sand filters, (3) reducing the industrial wasteload from Garelick Farms to 1,000 lbs./day, and (4) limiting future septage to the communities owning reserved capacity in the treatment plant and Wrentham.

In a letter dated January 4, 1996 the District also addressed our November 1995 comments. In the District's response (item 3) was the possibility of increasing effluent wasteload limits for the upgraded WWTF. The regulatory agencies jointly administering the NPDES program in Massachusetts (EPA and DEP) typically allocate the known assimilative capacity in each reach of a receiving stream to applicants based on concentrations that ensure water quality standards will be met. No capacity is reserved or

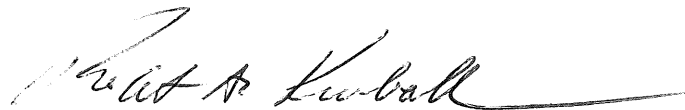
MEDWAY-DWPC-MA0102598  
ACO-CE-95-1001 Item #10  
Future Flow Evaluation  
Page 2

withheld. As a result, the assimilative capacity for sections of many streams have been fully allocated. In these fully allocated sections, the regulatory agencies have approved further increases to existing discharges contingent on no increase in the permittee's current wasteload allocation. This means that a permittee must upgrade the degree of removal proportionally to the requested flow increase in order to insure no net increase in pollutant load to the receiving water.

In order for the regulatory agencies to consider formal requests for additional pollutant loading to the Charles River it must be demonstrated to the agencies satisfaction that there is additional assimilative capacity available which has not been previously allocated. To demonstrate this, a detailed water quality evaluation must be performed using a calibrated and verified stream model acceptable to the agencies. Any request for additional loading should be sent to both Paul Hogan of DEP and Jane Downing of U.S. EPA

We regret any inconvenience the delay in our response may have created. If you have any questions feel free to contact Margo Webber of my staff at (508) 792-7650 ext. 3738.

Very truly yours,



Robert A. Kimball, P.E.  
Regional Section Chief  
Division of Water Pollution Control

mw/flowinc2.177

cc: Robert D. McRae, Executive Director, CRPCD, 66 Village St  
Donald DiMartino, Supt, DPW, 40 Blackstone St, Bellingham  
Wolfgang Bauer, Town Administrator, 150 Emmons St., Franklin  
Mark Flaherty, Supt Water & Sewer, 155 Village St, Medway  
Charles Aspinwall, Town Admin., 64 Exchange St, Millis  
Ronald Lyberger, DEP-BMF  
Paul Hogan, DEP-OWM  
William Mackey, CDM, 10 Cambridge Center, Cambridge, 02142  
Senator David Magnani  
Representative Barbara Gardner  
Representative James Vallee  
Jane Downing, EPA

**EXHIBIT D**  
**January 9, 1997 Meeting Minutes**  
**[Attached]**

CHARLES RIVER POLLUTION CONTROL DISTRICT

Minutes of January 9, 1997 Evening Meeting

The special meeting was held in the John McCahill Conference Room at the District's treatment facility. The meeting was held to listen to and discuss a report from CDM on the status of the treatment facility modifications design, the mass loadings river study. Attendees were as follows:

Camp, Dresser McKee\CRPCD's Engineering Consultant - William Mackey  
Executive Director CRPCD - Robert McRae  
District Commissioners Albert Brunelli, Lee Robbins, and Paul Wilson.  
Franklin Town Administrator - Wolfgang Bauer  
Medway Selectmen - Lee Henry and Douglas Downing

Item #1 - Background Information.

William Mackey from Camp, Dresser McKee (CDM) provided the representatives from the Towns of Medway and Franklin with some District background information. The treatment plant was originally designed in 1978 with twenty year life span. Design flow capacity will be reached in the year 1998. The plant was designed as a regional treatment facility to accept a flow of 4.54 million gallons per day (mgd). Over the years the growth was slow in the Franklin/Medway area. In the last ten years the growth has increased steadily. The District and the towns agreed to sell some of their capacity. Now the District accepts flow from the Towns of Franklin, Medway, parts of Bellingham, Millis, and septage from the Towns of Sherborn and Norfolk.

Three or four years ago, during a wet period, the flow to the District treatment plant reached eighty percent of it's design capacity for a continuous period of ninety days. The Department of Environmental Protection (DEP) has a requirement that if a wastewater facility reaches eighty percent of it's design capacity for a continuous period of ninety days the facility must commence with a plan for modification for their facility. The plan must be submitted before the facility reaches one hundred percent of the design capacity.

In addition to the hydraulic load, which is the flow, the treatment plant handles a biological load. The biological load has been much higher than it's design capacity since the first five years of the plant's existence. The plant most of the time is able to handle the additional biological load because of the manner the plant was being operated.

The DEP still remains concerned about the hydraulic and biological load to this treatment facility. Therefore, DEP utilized the eighty percent of design capacity for a continuous period of ninety days requirement to have the District prepare for modifications to expand the treatment plant to treat the flows that the District anticipated to the year 2015.

The District entered into a Consent Decree with the DEP to plan for modifications for the plant and expand to meet the flows and loads that would be applied. The District then contracted with CDM to prepare a phased facilities plan. Originally, this treatment facility was planned as a regional facility. When the plant was completed only the Towns of Franklin and Medway agreed to proceed.

With that regional background in mind, in the early 1990's CDM prepared a phased facilities plan by contacting the neighboring communities and requesting what their anticipated capacity needs would be for the next twenty years. The information was sent back to CDM and CDM estimated, from the information gathered, that the anticipated capacity needs were approximately 5.7 mgd.

A second point of information, but just as important, is the District has a discharge permit which allows the treatment facility to discharge only a certain load of pollutants to the Charles River. The concentration of the pollutants in the wastewater together with the volume of the wastewater can only reach a certain amount. That discharge permit amount was figured on the original 4.54 mgd flow figures.

After reviewing the records of how the treatment plant has been operated over the last sixteen or seventeen years, it was determined that the efficiency of treatment was better than what the original design predicted. Therefore, DEP would be able to increase the flow from 4.54 mgd to 5.7 mgd without increasing any load into the Charles River.

Bill Mackey emphasized the aforementioned was a very important point. He went on to say that the only way the District would have been able to modify or expand the plant without holding to its mass loadings would have been to engage the District or DEP in a complete river analysis.

CDM proceeded to submit the phased facilities report to DEP and it was approved. So, now the District is ready to proceed with the modifications. In the nine month interim period after communities had declared their capacity needs, rapid growth in the area and the Title V Regulations effected the earlier assessments for capacity in the member communities. With these changing elements coming into the equation several of the neighboring communities have recently contacted the District with requests for additional capacity. The 5.7 mgd was expected to be a twenty year capacity from 1995 to the year 2015.

Bill Mackey explained to the representatives from Franklin and Medway that CDM is in the process of preparing a design for modification of this treatment facility to increase the capacity from 4.54 million gallons per day (mgd) to 5.7 mgd. The contract between CDM and the District requires the work be completed by May 1, 1997. After such time the design work will be reviewed by DEP and Environmental Protection Agency (EPA). When all the approvals are given by DEP and EPA the District will apply for funding for the project.

The construction should commence by Fall, 1997. This construction goal was established by a Consent Decree schedule that the District signed.

One of the newer communities which wanted to join the plant was the Town of Holliston. The Town of Holliston proceeded to prepare a report and made the decision to come to this facility. When the Town of Holliston approached the DEP about coming to CRPCD, the DEP informed the Town of Holliston that the only way they could join the plant was if they performed a waste load allocation on the Charles River.

The DEP and the Town of Holliston agreed that a Waste Load Allocation Study would be performed. They further agreed that the DEP would fund half of the study and the Town of Holliston would fund the other half of the study. The DEP did not have the personnel available to perform the Waste Load Allocation Study. The DEP had not scheduled the study to take place for another five years. The Town of Holliston could not wait five more years. So, the District, the Town of Holliston and CDM have entered into a contract to have CDM perform the Waste Load Allocation Study. CDM started work on the Waste Load Allocation Study earlier to mid Summer, 1996 when the Charles River was at it's lowest flow.

The next modification will be completely dependent on the results of the Waste Load Allocation Study of the Charles River. The District will not the results of the Waste Load Allocation Study until at least March, 1997.

CDM's contract for the Waste Load Allocation Study with the District requires CDM to deliver a report on March 15, 1997 to the Commissioners. January 17, 1997, CDM Water Resources personnel, William Mackey and Executive Director Bob McRae will meet with the EPA, DEP and any other parties that are involved with the Waste Load Allocation Study. The purpose of the January 17, 1997 is to establish the method that will be utilized to perform the analysis for the Waste Load Allocation Study.

The Franklin Town Administrator addressed local rumors that suggest the Town of Holliston will definitely come to the District. Bill Mackey reiterated that no one can make such a prediction until after the Waste Load Allocation Study is done and until such time as the DEP and EPA say the flow can be increased by "x" amount.

Medway Selectman Lee Henry wanted to know if the District is actually discharging less than what would have been allowed because of the efficiency of the plant. Bill Mackey said that was a correct statement. Further, Mr. Henry asked if the current plant modification from 4.54 mgd to 5.7 mgd had been approved by the DEP and EPA.

Commissioner Brunelli answered yes, the current plant modification has been approved by the DEP and EPA, but with some other items that Bill Mackey did not touch on. One of these items includes reducing the solids from Garelick Farms, this pretreatment process is on schedule. Additionally, the member communities submitted a plan to reduce infiltration and inflow into the treatment facility. The District also must approve all sewer connections and sewer extensions and submit a

quarterly report to DEP on the connections and extensions. Commissioner Brunelli pointed out to Mr. Henry that the reduction of infiltration/inflow and pretreating of Garelick Farms wastewater should help the District to free up more capacity at the treatment plant.

Bill Mackey reiterated that the facilities planning report which calls for modification of the plant to increase capacity from 4.54 mgd to 5.7 mgd has been approved by DEP and EPA. CDM is in the process of design for the modifications. As a part of the design there are several other items that have to move forward.

One of these items is a Massachusetts Environmental Policy Act (MEPA) Environmental Notification Form (ENF) which was filed at the end of December, 1996. The process involves a thirty day review period and a ten day appeal period. This should result in a certificate or response by mid-February, 1997. Another item that is needed to move along is a certification from the Medway Conservation Commission approving the proposed location of the aeration basins and their proximity to the Black Swamp Wetlands.

Medway Selectman Lee Henry told Bill Mackey he had seen a two staged plan of plant modifications to the treatment facility. He thought the first stage was for plant modifications from 4.54 mgd to 5.7 mgd, then a second stage modification for the Town of Holliston. He asked for clarification on this issue.

Bill Mackey drew everyone back to the table he had for their perusal. He told Mr. Henry his question would be answered as they proceeded down the table.

The first column of the table shows the Present Day Capacity Ownership-1997 in mgd. This column reflects the Towns of Franklin, Medway, Millis and Bellingham as having wastewater capacity. The Towns of Norfolk and Sherborn have septage capacity.

The second column shows Capacity Allocated with Plant Modification from 4.54 mgd to 5.70 mgd. The column shows this capacity is owned jointly by the Towns of Franklin and Medway, the original owners. When the current plant modification is completed it will reflect the 5.70 mgd capacity. That figure of 5.70 mgd was gathered in the early 1990's from the regional communities responding to the District's request for their capacity needs for a twenty year period.

Before the ink was dry on the report to DEP the regional communities were requesting additional capacity at the treatment plant because of rapid growth and the new Title V Regulations. The third column reflects the Projected Year 2015 Capacity Allocation Based on Current Town Requests. Bill reviewed each town listed including the Towns of Holliston and Wrentham. Totalling up the current town requests the projected 2015 capacity CDM arrived at the figure of 9.472 mgd or 9.5 mgd for talking purposes.

The first and most important step to these future modifications is the approval of the Waste Load Allocation Study. Bill Mackey said realistically, the DEP will not have their comments until late Spring or early Summer, 1997.

Franklin Town Administrator Mr. Bauer noted that someone at DEP or EPA many years ago must have calculated a waste load allocation "figure" for the towns of Wrentham and Holliston. Bill Mackey said the towns of Wrentham and Holliston may have a waste load allocation "figure" for the Charles River, that "figure" was not calculated for the CRPCD. Bob McRae added that when the plant was designed there were no mass loading limitations. There was an assumption that as expansion came to the treatment plant greater mass loading would occur. But within the last few years, EPA implemented a new regulation that said no flow water in an existing treatment plant can be increased without decreasing\increasing the mass loading.

Mr. Bauer asked if the Charles River would be impacted if Holliston tied into the Milford treatment plant. Bob McRae said that Milford could not increase it's mass loadings to take Holliston. The irony is that if the Town of Holliston built it's own treatment plant and brought it to the Charles River, the Town of Holliston would probably receive a mass loading number. Mr. Bauer concluded that the waste load allocation "figure" was one of geographical nature. That being the location of the waste load on a certain location on the Charles River. Bob McRae said no, it was existing mass loadings versus new or additional mass loadings to the Charles River.

Bill Mackey was asked what percentage of the 9.472 mgd for the projected year 2015 is maximum build out? Mr. Mackey's thought was that the Town of Franklin's request for 5.180 mgd was perhaps a maximum build out request for capacity. He further noted that the figures reflected in the capacity allocation chart being reviewed were figures provided by the towns, not figures CDM calculated for the chart. Additionally, Mr. Mackey offered that the treatment plant does not have infinite capacity under any circumstances. When the District reaches the 9.472 mgd, the treatment plant will require significant modifications.

When the core plan was designed, it was only designed to treat wastewater from the Towns of Franklin and Medway. The DEP talked a regional treatment plant. When CDM designed the plant, most of the internal piping (things under the concrete and buildings) was designed to handle most of the regions flows. When the year 2015 arrives and significant modifications must take place, the pipes will not have to be dug up. The pumps will have to be changed, aeration basins will need to be added, and primary and secondary clarifiers may need to be added. Franklin Town Administrator Mr. Bauer noted that the value of the treatment plant was that the plant's basic infrastructure was designed for regional flows.

At this point, Medway Selectman Lee Henry informed the group that the Town of Medway is in the process (with town meeting approval) of spending money to update the town's master sewer plan. This project has not be undertaken for over twenty years. The updated information may cause the projected year 2015 capacity allocation figure request to change.

Commissioner Brunelli added that the capacity allocation figure will depend a lot on where the sewer line is located from the Town of Holliston to the District's treatment facility. Chairman Robbins reminded Mr. Henry that what the Town of Medway is currently using for capacity is far less than the capacity owned today (0.748 mgd). The capacity figures could change dramatically if the EPA instructs the Town of Medway to install lift stations in the town.

Bill Mackey noted that the capacity allocation projections provided to CDM for this table were probably made in the last 1970's. Chairman Robbins asked Medway Selectmen when the town's master sewer plan project would commence. Mr. Henry said a consultant has yet to be hired and the Town of Medway was working on a Request For Proposal (RFP).

Mr. Bauer asked if the District would encounter any long term problems as they increase their gallonage to New England Treatment Company (NETco). Chairman Robbins then asked when the contract was up for renewal. Bob McRae said the contract for sludge removal with NETco is renewable in 1998. Mr. Bauer asked if the sludge removal business was competitive. Bill Mackey answered that in recent years the sludge removal business has become very competitive.

Mr. Mackey told Mr. Bauer there were other options for sludge removal. Some treatment facilities take their waste to landfills in New Hampshire. Commissioner Brunelli questioned if the District had a standby option, if for some reason the Woonsocket facility was closed. Bob McRae said NETco has another plant that they would truck the District's sludge to.

Mr. Bauer asked Bob McRae when Garelick Farms will be on line pretreating their waste solids. The question was asked with relation to freeing up some capacity for the Town of Franklin and reducing the biological load to the treatment plant. Although the question about a specific date was not answered, there was some further discussion about Garelick Farms progress with their pretreatment project.

Bill Mackey presented the group, for discussion purposes, a schedule that showed the two contracts (design modifications for the treatment plant and the waste load allocation study) that CDM is currently working on for the District. The schedule also reflects some estimates of a time table for the two contracts and plant modifications to expand capacity from 5.7 mgd to 9.472 mgd.

There are assumptions made on the schedule, primarily because of the State Revolving Fund (SRF) monies. These monies have yet to be awarded. The schedule is only as good as the date the DEP awards the monies. CDM is scheduled to meet with DEP next week. Hopefully at that time, CDM will have a better understanding of the SRF schedule for funding on the facility modification.

Bill Mackey explained how the SRF funding functions. The SRF monies are not a bond, but a loan from the state with no interest. Once, twice or three times a year, depending on the demand for SRF monies, the administrators of the SRF band together a group of projects. A package is assembled on a volume basis, a number large enough so it is attractive to the bond market. Then they put that package out for tenders to the bond market. The administrators usually have some negotiating ability to determine the bond rate. Twenty years seems to be the average bond length.

At this time the SRF package is a zero interest loan. The District would only pay back the principal. Bill Mackey said this is the best option in the funding that is available for water pollution type projects.

Both Mr. Henry and Mr. Bauer wanted to know how much the facility modifications were going to cost. Bill Mackey said the project to modify the treatment plant from 4.54 mgd to 5.7 mgd, as shown in the facilities plan, was estimated to cost \$10.8 million dollars. Mr. Mackey asked them to remember that this was a "report-type estimate".

There was some discussion about whether the District would assess the Towns of Medway and Franklin for the facility modifications. The towns don't have to override Proposition 2 1/2. Bob McRae thought with a state loan and with the pretreatment of Garelick Farms, (dropping NETco payments by maybe \$300,000/year) if the District is allowed to keep that money, the District will have approximately the \$550,000/year to pay the state loan. Bob McRae said the total amount will be within the District's budget, but he individually can't guarantee increases to a given town will not exceed 2 1/2 percent.

Lee Henry expressed a serious concern about recharging the ground water. The more houses that tie into the sewer, the less recharging of the ground water. The water being discharged at the District goes into the Charles River and out to the ocean. Mr. Henry asked Bill Mackey if there was technology available to somehow discharge water from the CRPCD into the Medway/Franklin aquifers.

Bill Mackey said the District would have to go beyond the type of treatment the facility now has, plus the District would have to secure a Type 1 Permit to discharge back into the aquifers. In theory it can be done, in practice no. There are stringent regulations for this type of venture. There is some risk pumping treated wastewater down into drinking water aquifer.

Wolfgang Bauer asked if the plant modifications would be completed in 1999. This question brought everyone's attention back to Bill Mackey's schedule. Design for the facility modification will be completed by May, 1997. Two months have been estimated for the review by DEP and two additional months for review by the EPA. The approval of the SRF monies and the granting of funds and authorization to go to bid has been estimated at August, 1997. Advertising bids and going to construction has is next. The Consent Decree the District has with DEP specifies the construction be completed by September, 1999.

The next chart discussed was the Waste Load Allocation Study. The study is scheduled to be completed by March, 1997. CDM expects the EPA and DEP to spend some time reviewing it. An estimate on when EPA and DEP will complete their review was set at August-September, 1997. This is the most optimistic schedule that the group could see.

Before the District starts the modifications for beyond the 5.7 mgd the District will have to prepare another facilities plan. This new facilities plan can not be started until after the Waste Load Allocation Study is completed. Only then will the District know if it can increase the flow or loads to the Charles River.

For the major facilities plan (beyond the 5.7 mgd) Bill Mackey's schedule allowed several months for communities acceptance, buy-ins, EPA and DEP approvals and SRF approvals. Following those approvals the project would go out to design. It would be mid-2001 before the modifications necessary to increase capacity beyond 5.7 mgd were complete.

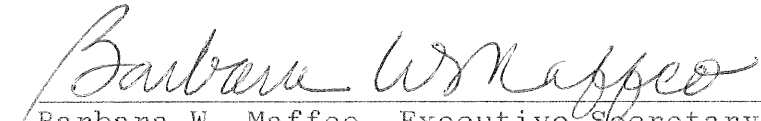
Bill Mackey told the group this table was created to give everyone an idea of the time frame involved in completing these projects. Wolfgang Bauer asked if there was a target date for acceptance of Holliston's wastewater. Mr. Mackey reiterated that until the Waste Load Allocation Study is completed and a decision is rendered by the DEP and EPA the District can not accept Holliston's wastewater.

Mr. Bauer went on to ask if the Waste Load Allocation Study gave approval for the Town of Holliston to come to the District, when would the District be ready to accept their wastewater. Commissioner Brunelli referred to Bill Mackey's schedule for the completion of the facilities modification to increase capacity beyond the 5.7 mgd. That would be mid-2001. Mr. Bauer questioned whether the Town of Holliston could wait that long to be on line. Bill Mackey said there was no other choice.

There was some discussion about a realistic schedule of events for the Town of Holliston. They have now engaged an engineer to continue on with the study of where to put the pipe lines from the Town of Holliston to the Town of Medway. Before they go to design they should wait until there is authorization from DEP and EPA that the Waste Load Allocation Study will allow them to come to the District. There should also be time scheduled before design is completed for negotiations regarding buy-in charges. From that time on, like any design project, there will have to be DEP and EPA approvals. The project will have to go to bid and then go to construction.

It is possible that the Town of Holliston could start their pipeline construction, simultaneously with the construction work proposed at the District for the modifications to increase capacity beyond the 5.7 mgd. The Town of Holliston could be ready to deliver wastewater in the 1999-2000. That would be the actual time the District would be ready to receive their wastewater. But, to say that the Town of Holliston would be ready to deliver to the treatment plant one million gallons of flow in the year 1999 is unrealistic.

Lee Henry asked when the Town of Holliston delivers wastewater to the District they will pay for the one million gallons. If it requires construction at the District to accommodate that one million gallons, the Town of Holliston will pay for that also. Mr. Bauer noted that all the communities will pay a portion of the increase from 5.7 mgd to 9.472 mgd. Whether it is paid for with money received from Holliston's buy in, it will still have to be paid for by the individual communities.

  
\_\_\_\_\_  
Barbara W. Maffeo, Executive Secretary  
Charles River Pollution Control District

WITNESS:

  
\_\_\_\_\_  
Paul R. Wilson, Clerk  
Charles River Pollution Control District

DATE APPROVED:

  
\_\_\_\_\_

**EXHIBIT E**  
**October 1997 Water Pollution Abatement Plan**  
**[Attached]**

**CHARLES RIVER POLLUTION CONTROL DISTRICT**

**WATER POLLUTION ABATEMENT PLAN**

**AMENDED NOVEMBER 1979**

**AMENDED OCTOBER 1982**

**AMENDED OCTOBER 1997**

## General

The Towns of Franklin and Medway, Massachusetts voted at their respective town meetings in March 1973 to establish the Charles River Pollution Control District as a regional water pollution abatement facility. The purpose of the Charles River Pollution Control District is to collect and treat the wastewater and septage of contributing area communities. At this time, the Towns of Franklin and Medway, Massachusetts are the only District member towns. The District has entered into agreements with the Towns of Franklin and Medway for the wastewater treatment services the District provides. The Towns of Franklin and Medway have voted to relinquish a portion of their allotted capacities in the District's treatment facility and outfall sewer to allow the Towns of Millis, Bellingham, Norfolk, Sherborn and Dover, Massachusetts to become customers of the District and discharge wastewater and/or septage to the District's facilities for treatment. Table 1 of Appendix A represents the treatment capacity allocated to the contributing communities.

The District's governing body, the Board of Commissioners of the Charles River Pollution Control District consists of five members, three from the Town of Franklin and two from the Town of Medway. Each Commissioner is appointed to a three-year term by the elected governing body in the respective member town.

The District's treatment facilities (i.e., treatment facility, Charles River Interceptor, Mine Brook Interceptor and Outfall Sewer) began operation on January 15, 1980. The Chicken Brook Connector was placed into service in the spring of 1980. The Black Swamp Interceptor, to serve a portion of the Town of Medway and the major portion of the Town of Millis, was placed into service in 1985. The Shepards Brook Interceptor, to serve a portion of the Town of Franklin with capacity for a potential future connection from the Town of Wrentham, was placed into service in 1988. The Route 495 Crossing, Pumping Station and Route 140 Interceptor, to serve a portion of Franklin and provide a connecting pipeline for the Town of Bellingham, was put into service in 1995.

The District's treatment facility is an advanced wastewater treatment facility involving seasonal phosphorus removal and nitrification from May 1 to October 31 of each year. The final treated effluent from this facility discharges into the upper Charles River.

The District's treatment facility is approaching its initial (1998) design year capacity of 4.54 million gallons per day (mgd) and requires modification to increase its capacity to continue to accept wastewater and septage from its member and customer communities.

Attached in Appendix A is a schematic diagram and the design data for the District's treatment facility, including the proposed modifications.

## Description of Modifications Project

The modifications project consists of construction of modifications to improve reliability and to upgrade the existing 4.54 mgd average day flow wastewater treatment plant to accommodate a design average day flow of 5.704 mgd. Modifications include the following: a mechanical screen to replace an existing comminuter, a gravity belt thickener to replace an existing flotation thickener, two new aeration basins, an anoxic selector, a new blower building housing blowers and an emergency power generator, a new effluent filtration building housing four cloth disk effluent filters and plant water system, and modifications to the existing electrical system and emergency power system. Construction of the project will allow uninterrupted operation of the existing plant. It is expected that the proposed modifications will improve the treatment process so that the increase in capacity will not result in the discharge of contaminants in the effluent above the currently permitted National Pollutant Discharge Elimination System (NPDES) limits.

The added 1.164 mgd of treatment capacity will be apportioned to the member Towns of Franklin and Medway. Apportionment will be 80 percent Franklin, 20 percent Medway, the ratio of original plant capacity ownership.

The methods for apportioning the District's costs for both capital projects and operation and maintenance are outlined in the District/member town wastewater treatment service agreements.

## Apportionment of Capital Costs

The District's capital costs are apportioned to the owners (i.e., member towns and customers) of the reserved capacity of the District's treatment facilities in proportion to their share of this capacity to the total reserve capacity. This capacity is based upon average daily wastewater volume.

The local share of the capital costs for the District's existing treatment facilities (i.e., treatment facility, Mine Brook Interceptor, Charles River Interceptor, and Outfall Sewer) was bonded in July 1980. The debt service for the 15-year, \$3,000,000 bond issue was retired in 1995.

It is anticipated that the proposed modifications project total cost will be \$15,588,500 to include: \$48,500 for Facilities Planning; \$690,000 for Design; \$14,850,000 for construction to be done in two phases — Phase 1 (\$850,000) will be the construction of an additional mechanical screening system and the replacement of a flotation thickener system with a gravity belt thickener system — Phase 2 (\$14,000,000) will be the construction of all other proposed modifications.

Table I in Appendix B shows the percentage share of the reserved capacity, after the modifications project is completed, to be owned by the Towns of Franklin, Medway, Millis, Bellingham, Norfolk, Sherborn and Dover.

The District has applied for and received a Project Approval Certificate for the design of the proposed modifications. The certificate indicates that project costs of \$665,073 will be eligible for a 50 percent grant equivalency loan from the Massachusetts Water Pollution Abatement Trust (TRUST).

The District has applied for and received a Project Approval Certificate for the construction of the additional mechanical screening system and a gravity belt thickener. The certificate indicates project costs of \$850,000 will be eligible for a 75 percent grant equivalency loan from the Massachusetts Water Pollution Abatement Trust.

The District has submitted an application to the Department of Environmental Protection for financial assistance from the State Revolving Fund for the construction of the proposed modifications. The District anticipates the estimated cost of \$14,000,000 will be eligible for at least a 50 percent grant equivalency loan from the TRUST.

Tables B through H of Appendix C indicate the estimated apportionment of capacity and costs associated with the proposed modifications project. Final costs apportioned to member and customer communities will be based on the actual construction and project costs incurred following completion of the modifications project.

## Apportionment of Operation and Maintenance Costs

The apportionment of the annual operation and maintenance costs are directly related to the wastewater flows and strengths received from District member towns and/or customers. The strength parameters involved in the cost apportionments are biochemical oxygen demand, total suspended solids, total phosphorus and ammonia nitrogen. The District currently assesses operation and maintenance costs at the rate of \$1,400.00 per million gallons of wastewater treated.

APPENDIX A

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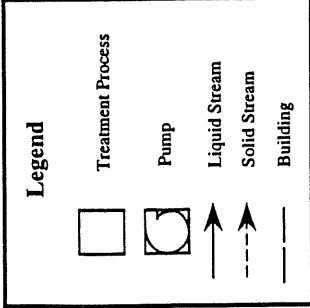
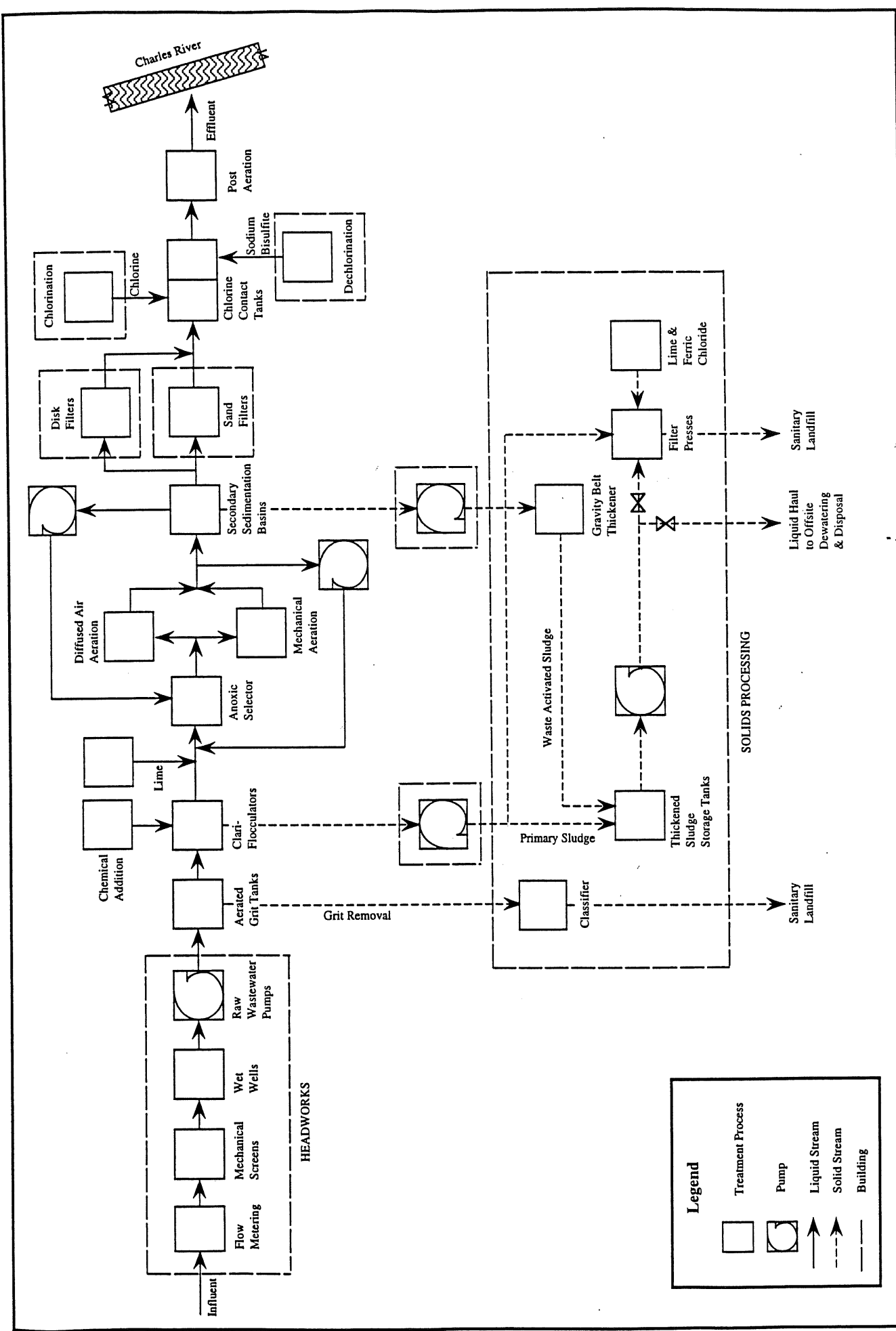
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Appendix A  
Table 1

Charles River Pollution Control District  
Wastewater Treatment Plant  
Capacity Allocation

Town	Capacity Owned-1997 Millions of Gallons per Day (mgd)	%
Franklin	2.919	64.30
Medway	0.723	15.93
Millis	0.500	11.01
Bellingham	0.300	6.60
Norfolk*	0.048	1.06
Sherborn*	0.025	0.55
Dover*	0.025	0.55
TOTAL	4.54	100.00

\*Septage equivalent.



**Charles River Pollution Control District**  
 Medway, MA  
 Figure 1: Process Flow Diagram

Camp Dresser & McKee Inc.

**CHARLES RIVER POLLUTION CONTROL DISTRICT**  
**WASTEWATER TREATMENT FACILITIES**  
**DESIGN DATA AND PROCESS UNIT DESCRIPTIONS**

**DESIGN FLOWS AND LOADINGS**

Design Flows (mgd)

■ Average Annual .....	5.704
■ Maximum Day .....	13.690
■ Peak Hour .....	17.682
■ Minimum Day .....	3.422

Design Loadings (lb/day)

■ Average Day	
— BOD .....	8,258
— TSS .....	14,369
— Nitrogen .....	1,590
— Phosphorus .....	337
■ Maximum Day	
— BOD .....	14,900
— TSS .....	30,200
— Nitrogen .....	3,020
— Phosphorus .....	640

# CHARLES RIVER POLLUTION CONTROL DISTRICT

## WASTEWATER TREATMENT FACILITIES

### SUMMARY OF TREATMENT PROCESSES

1. Mechanical screening.
2. Raw wastewater pumping.
3. Grit removal utilizing grit chambers, cyclones, and classifiers.
4. Primary sedimentation with chemical precipitation of phosphorus.
5. Aeration for BOD and ammonia-nitrogen removal.
6. Secondary sedimentation.
7. Gravity filtration.
8. Chlorination (gas) including breakpoint for improved ammonia-nitrogen removal.
9. Dechlorination with sodium bisulfite.
10. Sludge handling:
  - a. Thickening of waste activated sludge with gravity belt thickener or air flotation.
  - b. Thickening of primary sludge in primary sedimentation tanks.
  - c. Sludge disposal by hauling liquid sludge off site for dewatering and disposal by private contractor or dewatering of chemically conditioned combined thickened sludge by in plant pressure filters with ultimate disposal of sludge by landfilling.

**PROCESS UNIT DESCRIPTIONS**

Number of Units

Septage Holding Tanks ..... 2

- Volume Each (gallons) ..... 18,000

Primary Treatment Facilities

- Mechanical Screens (1 existing, 1 proposed) ..... 2

- Manual Screen ..... 1

Aerated Grit Chambers ..... 2

- Length (ft) ..... 15.3

- Width (ft) ..... 24.5

- Depth (ft) ..... 13.0

Clariflocculators ..... 2

- Flocculator

- Diameter ..... 36

- Depth ..... 8

- Clarifier

- Diameter, including flocculator (ft) ..... 90

- Sidewater Depth (ft) ..... 14

## AERATION

### Mechanical Aeration Activated Sludge System

- Number of Tanks ..... 8
- Effective Dimensions (ft)
  - Length ..... 45
  - Width ..... 45
  - Depth ..... 12
- Existing Effective Aeration Volume ..... 1.44 MG
- Mechanical Aerators
  - Number of Units ..... 8 (one per basin)
- Drive Motor (2 speed) .... 50 hp/1200 rpm, 50 hp/900 rpm)

### Fine Bubble Diffused Air Activated Sludge System (proposed)

- Anoxic Selector (serves mechanical and diffused air aeration basins)
  - Number of Trains ..... 1
  - Stages per Train ..... 3
  - Stage Dimensions (ft)
    - First Stage ..... 11.5 x 11.5 x 15 deep
    - Second Stage ..... 11.5 x 11.5 x 15 deep
    - Third Stage ..... 11.5 x 23 x 15 deep
- Diffused Air Aeration Tanks (excluding selector) (proposed)
  - Number of Tanks ..... 2
  - Effective Dimensions of Each Tank (ft)
    - Length ..... 230
    - Width ..... 36

- Depth ..... 15
- Effective Aeration Volume ..... 1.86 MG
- Blowers
  - Number of Units ..... 3
  - Type ..... Positive Displacement
  - Capacity ..... 2,870 scfm
  - Motor Horsepower ..... 200 hp

Secondary Sedimentation

- Secondary Clarifiers ..... 4
  - Diameter (ft) ..... 90
  - Sidewater Depth (ft) ..... 15

Final Treatment Facilities

- Gravity Sand Filters ..... 2
  - Dimensions Per Filter (ft)
    - Length ..... 70
    - Width ..... 16
    - Surface Area (ft<sup>2</sup>) ..... 1,170
    - Sand Depth (inches) ..... 11
- Cloth Disk Filters (proposed) ..... 4
  - Filter Data Per Filter (ft<sup>2</sup>)
    - Surface Area Each Filter ..... 645.6

- Chlorine Contact Tanks ..... 2
  - Length (ft) ..... 54
  - Width (ft) ..... 30
  - Depth (ft) ..... 10
  
- Gas Chlorinators ..... 3
  - Disinfection ..... 1
  - Miscellaneous Uses ..... 1
  - Standby ..... 1
  
- Dechlorination
  - Sodium Bisulfite

Sludge Processing Facilities

- Gravity Belt Thickener (proposed) — Size - 2 meter ..... 1
- Air Flotation Unit ..... 1
- Sludge Holding Tanks ..... 2
  - Volume Each (ft<sup>3</sup>) ..... 4,150
- Sludge Disposal — Options
  1. To liquid tanker truck, haul to off-site  
dewatering and disposal by private contractor.
  2. In plant dewatering and landfill
- Filter Press ..... 2

NOTE: For additional information (including information on processes), refer to the Charles River Pollution Control District Phase 1A Facilities Plan dated September 1995.

APPENDIX B

11

Appendix B  
Table 1

Charles River Pollution Control District  
Wastewater Treatment Plant  
Capacity Allocation

Town	Capacity Owned-1997 Millions of Gallons per Day (mgd)	%	Capacity Allocated with Plant Modification to 5.704 mgd	%
Franklin	2.919	64.30	3.850**	67.50
Medway	0.723	15.93	0.956**	16.76
Millis	0.500	11.01	0.500	8.76
Bellingham	0.300	6.60	0.300	5.26
Norfolk*	0.048	1.06	0.048	0.84
Sherborn*	0.025	0.55	0.025	0.44
Dover*	0.025	0.55	0.025	0.44
<b>TOTAL</b>	<b>4.54</b>	<b>100.00</b>	<b>5.704</b>	<b>100.00</b>

\*Septage equivalent.

\*\*Allocation of increase in capacity based on original plant ownership,  
80 percent Franklin and 20 percent Medway.

APPENDIX C

CHARLES RIVER POLLUTION CONTROL DISTRICT

TABLE A

RESERVED CAPACITY PERCENTAGES

TOWN	EXISTING FACILITY		MODIFIED FACILITY	
	Capacity (mgd)	Percentage (%)	Capacity (mgd)	Percentage (%)
Franklin	2.919	64.30%	3.850	67.50%
Medway	0.723	15.93	0.956	16.76
Millis	0.500	11.01	0.500	8.76
Bellingham	0.300	6.60	0.300	5.26
Norfolk	0.048	1.06	0.048	0.84
Sherborn	0.025	0.55	0.025	0.44
Dover	<u>0.025</u>	<u>0.55</u>	<u>0.025</u>	<u>0.44</u>
Total	4.540 mgd	100.00%	5.704 mgd	100.00%

TABLE B

AERATION CAPACITY (mgals)

TOWN	EXISTING FACILITY		MODIFIED FACILITY	
	65% R	22% R	NEW	TOTAL
Franklin	0.926 mgals	1.742 mgals	0.472 mgals	2.214 mgals
Medway	0.229	0.432	0.118	0.550
Millis	0.159	0.298	0.000	0.298
Bellingham	0.095	0.179	0.000	0.179
Norfolk	0.015	0.029	0.000	0.029
Sherborn	0.008	0.015	0.000	0.015
Sherborn	<u>0.008</u>	<u>0.015</u>	<u>0.000</u>	<u>0.015</u>
//Total	1.440 mgals	2.710 mgals	0.590 mgals	3.300 mgals

R = Removal of TBOD5 through primary stage of treatment facility.

Rated capacity of existing facility based upon current design criteria:  
 $4.540 \times ((100\% - 65\%)/(100\% - 22\%)) = 2.037 \text{ mgals}$

Volume of new aeration capacity allotted to existing facility:  
 $(3.300 - 1.440) \times ((4.540 - 2.037)/(5.704 - 2.037)) = 1.270 \text{ mgals}$

TABLE C

AERATION CAPACITY APPORTIONMENT  
MODIFIED TREATMENT FACILITY

TOWN	ADDED AERATION CAPACITY	PERCENT	COST
Franklin	1.288 mgals	69.25%	\$ 6.01 M
Medway	0.321	17.25	1.50
Millis	0.139	7.47	0.65
Bellingham	0.084	4.52	0.39
Norfolk	0.014	0.75	0.07
Sherborn	0.007	0.38	0.03
Dover	<u>0.007</u>	<u>0.38</u>	<u>0.03</u>
Total	1.860 mgals	100.00%	\$ 8.68 M

TABLE D

## SAND FILTER RESERVED CAPACITY

TOWN	EXISTING FACILITY		MODIFIED FACILITY	
Franklin	1,505 sq ft	64.30%	3,321 sq ft	67.50%
Medway	373	15.93	824	16.76
Millis	257	11.01	431	8.76
Bellingham	154	6.60	259	5.26
Norfolk	25	1.06	41	0.84
Sherborn	13	0.55	22	0.44
Dover	13	0.55	22	0.44
Total	2,340 sq ft	100.00%	4,920 sq ft	100.00%

TABLE E

SAND FILTER CAPACITY APPORTIONMENT  
MODIFIED TREATMENT FACILITY

TOWN	ADDED SAND FILTER CAPACITY	PERCENT	COST
Franklin	1,816 sq ft	70.39%	\$ 3.10 M
Medway	451	17.48	0.77
Millis	174	6.74	0.30
Bellingham	105	4.07	0.18
Norfolk	16	0.62	0.03
Sherborn	9	0.35	0.01
Dover	9	0.35	0.01
Total	2,580 sq ft	100.0%	\$ 4.40 M

TABLE F

GRAVITY BELT THICKENER/MECHANICAL BAR SCREEN  
APPORTIONMENT

TOWN	RESERVED CAPACITY MODIFIED FACILITY	PERCENT	COST
Franklin	3.850 mgals	67.50%	\$ 0.57 M
Medway	0.956	16.76	0.14
Millis	0.500	8.76	0.07
Bellingham	0.300	5.26	0.04
Norfolk	0.048	0.84	0.01
Sherborn	0.025	0.44	0.01
Dover	<u>0.025</u>	<u>0.44</u>	<u>0.01</u>
Total	5.704 mgals	100.0%	\$ 0.85 M

TABLE G

STANDBY GENERATOR AND TRANSFORMER  
APPORTIONMENT

TOWN	RESERVED CAPACITY MODIFIED FACILITY	PERCENT	COST
Franklin	3.850 mgals	67.50%	\$ 0.61 M
Medway	0.956	16.76	0.15
Millis	0.500	8.76	0.08
Bellingham	0.300	5.26	0.05
Norfolk	0.048	0.84	0.01
Sherborn	0.025	0.44	0.01
Dover	<u>0.025</u>	<u>0.44</u>	<u>0.01</u>
Total	5.704 mgals	100.0%	\$ 0.92 M

TABLE H  
 PROJECTED AVERAGE  
 APPORTIONMENT  
 MODIFIED TREATMENT FACILITY

TOWN	AERATION	SAND FILTERS	THICKENER/ BAR SCREEN	GENERATOR/ TRANSFORMER	TOTAL	AVERAGE PERCENT
Franklin	\$ 6.05 M	\$ 3.10 M	\$ 0.57 M	\$ 0.61 M	\$ 10.33 M	69.55
Medway	1.50	0.77	0.14	0.15	2.56	17.24
Millis	0.63	0.30	0.07	0.08	1.08	7.27
Bellingham	0.38	0.18	0.04	0.05	0.65	4.38
Norfolk	0.06	0.03	0.01	0.01	0.11	0.74
Sherborn	0.03	0.01	0.01	0.01	0.06	0.41
Dover	<u>0.03</u>	<u>0.01</u>	<u>0.01</u>	<u>0.01</u>	<u>0.06</u>	<u>0.41</u>
Total	\$ 8.68 M	\$ 4.40 M	\$ 0.85 M	\$ 0.92 M	\$14.85 M	100.00%

The costs for planning and design for the modified treatment facility will be apportioned to the towns in accordance with their average percentage.

DISTRICT ESTIMATED OPERATION AND MAINTENANCE COSTS

	<u>FISCAL YEAR</u>		
	1996	1997	1998
Administrative	\$ 85,700	\$ 86,600	\$ 90,400
O & M Salaries	554,400	583,000	590,200
Power	267,000	293,200	314,400
Heating Oil	7,400	7,000	7,400
Chemicals	75,800	72,900	83,300
Maintenance	<u>285,600</u>	<u>275,200</u>	<u>247,700</u>
Total	\$ 1,985,100	\$ 2,037,900	\$ 2,116,400
Less Septage Revenue	390,300	429,800	310,000
Total	\$ 1,594,800	\$ 1,608,100	\$ 1,806,400

APPENDIX D

11

*Charles River Pollution Control District*  
Serving the Towns of Franklin and Medway

Franklin Commissioners  
John J McCahill Chairman  
Norman C Ristaino

Medway Commissioners  
Morris Nirenberg  
John E Dronzek

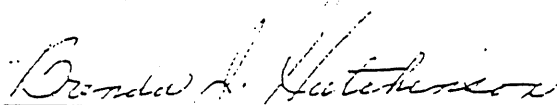
CERTIFICATE OF VOTE

I hereby certify that at a meeting of the Charles River Pollution Control District duly called and held on January 13, 1976, at 89 Main Street, Medway, Massachusetts, at which all of the members were present and voting, the following vote was unanimously passed.

VOTED: "That the District appropriate \$25,000,000 for final plans for and the construction of interceptors and waste-water treatment facilities and disposal facilities; that to raise this appropriation the Treasurer with the approval of the District is authorized to borrow \$25,000,000 under G. L. Chapter 21, Section 30; and that the District is authorized to apply for Federal and State aid which shall be spent for the project, provided that the total authorized borrowing shall be reduced by the amount of any Federal and State construction grants obtained for the purpose of carrying out the project."

A true copy

ATTEST:

  
Secretary

# Charles River Pollution Control District

Serving the Towns of Franklin and Medway

FRANKLIN COMMISSIONERS

John J. McShane, Chairman  
Norman C. Ristaino

~~XXXXXXXXXXXX~~

at Village Street

Medway, Massachusetts 02051  
508-6761

MEDWAY COMMISSIONERS

Paul J. DeSantis  
Paul R. Wilson

August 24, 1981

Mr. Thomas C. McMahon, Director  
The Commonwealth of Massachusetts  
Executive Office of Environmental Affairs  
Department of Environmental Quality Engineering  
Division of Water Pollution Control  
One Winter Street  
Boston, Massachusetts 02108

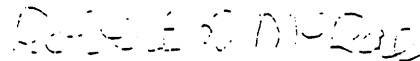
Re: CRPCD/Millis Agreement  
Wastewater Treatment Services

Dear Mr. McMahon:

The member towns of Franklin and Medway voted in 1980 to relinquish a portion of their allotted capacity in the District's treatment facilities for the intent purpose of the Charles River Pollution Control District negotiating a wastewater treatment services agreement with the Town of Millis.

Presently, the District has submitted a draft agreement to the Town of Millis for review. The District anticipates that an agreement will be reached with Millis for wastewater treatment services by the District.

Very truly yours  
Charles River Pollution  
Control District



Robert D. McRae, P. E.  
Executive Director

cc: Millis Board of Public Works  
Anderson-Nichols & Co., Inc.

RDM:rv



# TOWN OF FRANKLIN

The Office of the Town Administrator  
P.O. Box 327 - 150 Emmons Street  
Franklin, Massachusetts 02038

Telephone 528-0049

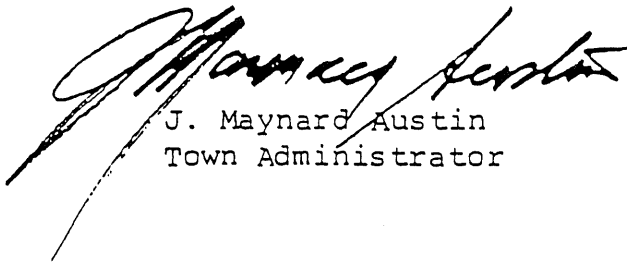
June 6, 1980

Mr. John J. McCahill, Chairman  
Charles River Pollution Control District  
P. O. Box 117  
Medway, Mass. 02053

Dear Mr. McCahill:

In response to the interest expressed by the Town of Millis in contracting with the Charles River Pollution Control District for wastewater treatment services and the vote of the District Commissioners on March 6th approving the taking of the Town of Millis as a customer of the District, the Town Council on June 4, 1980 voted to adopt the attached Resolution No. 80-36.

Very truly yours,



J. Maynard Austin  
Town Administrator

JMA/ajh

Attachment

June 4, 1980

RESOLUTION NO. 80-36

RELINQUISHING PLANT CAPACITY TO MILLIS

CHARLES RIVER POLLUTION CONTROL DISTRICT

WHEREAS, the Town of Millis has expressed an interest in contracting with the Charles River Pollution Control District for wastewater treatment services; and

WHEREAS, the Charles River Pollution Control District has agreed to contract with the Town of Millis for wastewater treatment services, subject to the approval of the member Towns of the District; and

WHEREAS, the agreement between the Town of Franklin and the Charles River Pollution Control District makes provision for users other than an existing District Municipality; and

WHEREAS, the Town of Franklin can relinquish and release 0.4 GPM of the reserve capacity assigned to it, without adversely affecting its ability to provide wastewater treatment services;

NOW THEREFORE, be it moved and voted that the Town of Franklin relinquish and release its right to 0.4 GPM of the reserved capacity assigned to it, for the purpose of enabling the Charles River Pollution Control District to contract with the Town of Millis for wastewater treatment services, in accordance with provisions of Section 308 of the agreement between the Town of Franklin and the Charles River Pollution Control District dated August 20, 1979.

Date: June 4, 1980.

VOTED UNANIMOUSLY: \_\_\_\_\_

YES 13 NO 1

Robert W. Atkins  
Robert W. Atkins, Clerk  
FRANKLIN TOWN COUNCIL

# Charles River Pollution Control District

Serving the Towns of Franklin and Medway

## FRANKLIN COMMISSIONERS

John J. McCahill, Chairman  
Norman C. Ristaino

66 Village Street  
Medway, Massachusetts 02053  
533-6762

## MEDWAY COMMISSIONERS

Paul J. DeSimone  
Paul R. Wilson

### CERTIFICATION OF VOTE

I, Dorothy Driscoll, Executive Secretary of the Charles River Pollution Control District, hereby certify that at a meeting of the District, duly called and held on Thursday, October 14, 1982, which all of the Commissioners were present and voting, the following vote was unanimously approved:

"VOTED: That the District hereby appropriates \$1,850,000 for the plans and for the construction of the Black Swamp Interceptor project; that to raise this appropriation the Treasurer with the approval of the Commissioners is authorized to borrow \$1,850,000 under G.L. Chapter 21, Section 35; and that the District is authorized to apply for federal and state aid which will be spent for the project, provided that the total authorized borrowing shall be reduced by the amount of any federal and state construction grants obtained for the purpose of carrying out the project."

A true copy,

ATTEST:

  
Paul R. Wilson, Clerk

October 25, 1982



# Charles River Pollution Control District

Serving the Towns of Franklin, Medway, Millis, Bellingham and Norfolk

## FRANKLIN COMMISSIONERS

Lee W. Robbins

Albert R. Brunelli

Roger A. Rondeau, Chairman

66 Village Street

Medway, Massachusetts 02053

TEL (508) 533-6762

FAX (508) 533-7652

## MEDWAY COMMISSIONERS

Paul R. Wilson

Paul J. DeSimone

### CERTIFICATION OF VOTE

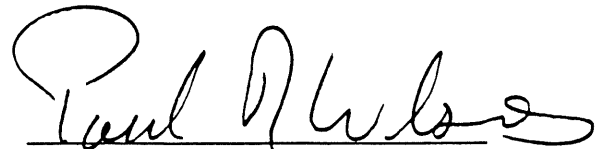
I, Barbara Maffeo, Executive Secretary of the Charles River Pollution Control District, hereby certify that at a meeting of the District, duly called and held on Thursday, July 10, 1997, at which four of the five Commissioners were present and voting, constituting a quorum, the following vote was unanimously approved:

"Voted: That \$14,000,000 is appropriated for the purpose of financing the construction and all related costs of the wastewater treatment plant modifications including without limitations all costs thereof as defined in Section 1 of Chapter 29C of the General Laws; that to meet this appropriation the Treasurer with the approval of the Board of Commissioners is authorized to borrow \$13,950,000 and issue bonds or notes therefore under Chapter 29C of the General Laws; that such bonds or notes shall be general obligations of the District unless the Treasurer with the approval of the Board of Commissioners determines that they should be issued as limited obligations and may be secured by local system revenues as defined in Section 1 of Chapter 29C; that the Treasurer with the approval of the Board of Commissioners is authorized to borrow all or a portion of such amount from the Massachusetts Water Pollution Abatement Trust established pursuant to Chapter 29C and connection therewith to enter into a loan agreement and/or a security agreement with the Trust and otherwise to contract with the Trust and the Department of Environmental Protection with respect to such loan and for any federal or state aid available for the project or for the financing thereof; that the Chairman is authorized to enter into a project regulatory agreement with the Department of Environmental Protection, to expend all funds available for the project and to take any other action necessary to carry out the project.

A true copy,

ATTEST:

July 10, 1997

  
Paul R. Wilson, Clerk



# Charles River Pollution Control District

Serving the Towns of Franklin, Medway, Millis, Bellingham and Norfolk

## FRANKLIN COMMISSIONERS

Lee W. Robbins, Chairman  
Albert R. Brunelli  
Roger A. Rondeau

66 Village Street

Medway, Massachusetts 02053  
TEL (508) 533-6762  
FAX (508) 533-7652

## MEDWAY COMMISSIONERS

Paul R. Wilson  
Paul J. DeSimone

### CERTIFICATION OF VOTE

I, Barbara Maffeo, Executive Secretary of the Charles River Pollution Control District, hereby certify that at a meeting of the District, duly called and held on Thursday, March 13, 1997, at which four of the five Commissioners were present and voting, constituting a quorum, the following vote was unanimously approved:

"Voted: That \$850,000 is appropriated for the purpose of financing the construction and all related costs of the sludge thickener and bar screen improvements including without limitations all costs thereof as defined in Section 1 of Chapter 29C of the General Laws; that to meet this appropriation the Treasurer with the approval of the Board of Commissioners is authorized to borrow \$850,000 and issue bonds or notes therefore under Chapter 29C of the General Laws; that such bonds or notes shall be general obligations of the District unless the Treasurer with the approval of the Board of Commissioners determines that they should be issued as limited obligations and may be secured by local system revenues as defined in Section 1 of Chapter 29C; that the Treasurer with the approval of the Board of Commissioners is authorized to borrow all or a portion of such amount from the Massachusetts Water Pollution Abatement Trust established pursuant to Chapter 29C and connection therewith to enter into a loan agreement and/or a security agreement with the Trust and otherwise to contract with the Trust and the Department of Environmental Protection with respect to such loan and for any federal or state aid available for the project or for the financing thereof; that the Chairman is authorized to enter into a project regulatory agreement with the Department of Environmental Protection, to expend all funds available for the project and to take any other action necessary to carry out the project.

A true copy,

ATTEST:

March 13, 1997

Paul R. Wilson, Clerk



# Charles River Pollution Control District

Serving the Towns of Franklin, Medway, Millis, Bellingham and Norfolk

FRANKLIN COMMISSIONERS  
Lee W. Robbins, Chairman  
Albert R. Brunelli  
Roger A. Rondeau

66 Village Street  
Medway, Massachusetts 02053  
TEL (508) 533-6762  
FAX (508) 533-7652

MEDWAY COMMISSIONERS  
Paul R. Wilson  
Paul J. DeSimone

## CERTIFICATION OF VOTE

I, Barbara Maffeo, Executive Secretary of the Charles River Pollution Control District, hereby certify that at a special meeting of the District, duly called and held on Thursday, June 27, 1996, at which all of the Commissioners were present and voting, the following vote was unanimously approved:

"Voted: That the District hereby votes to appropriate the sum of \$300,000 for the design of the treatment facility modifications from the unexpended capital projects monies from Fiscal Year 1996."

A true copy,

ATTEST:

September, 24, 1996

A handwritten signature in cursive script that reads "Paul R. Wilson". The signature is written in dark ink and is positioned above a horizontal line.

Paul R. Wilson, Clerk



# Charles River Pollution Control District

Serving the Towns of Franklin, Medway, Millis, Bellingham and Norfolk

FRANKLIN COMMISSIONERS

Lee W. Robbins, Chairman  
Albert R. Brunelli  
Roger A. Rondeau

66 Village Street

Medway, Massachusetts 02053

TEL (508) 533-6762

FAX (508) 533-7652

MEDWAY COMMISSIONERS

Paul R. Wilson  
Paul J. DeSimone

## CERTIFICATION OF VOTE

I, Barbara Maffeo, Executive Secretary of the Charles River Pollution Control District, hereby certify that at a meeting of the District, duly called and held on Thursday, March 14, 1996, at which four of the five // Commissioners were present and voting, constituting a quorum, the following vote was unanimously approved:

"Voted: That the District hereby votes to approve the capital projects portion of its Fiscal Year 1997 Budget in the amount of \$519,800."

A true copy,

ATTEST:

September, 24, 1996

A handwritten signature in cursive script that reads "Paul R. Wilson".

Paul R. Wilson, Clerk

CAPITAL IMPROVEMENTS  
COST ALLOCATION  
FOR TREATMENT FACILITY

I/I Reduction Phase II	\$ 100,000
Treatment Facility Modification Design	<u>419,800</u>
 Projected Total Cost	 \$ 519,800
 Capital Septage Assessments	 <u>\$( 72,900)</u>
 Projected Net Capital Costs	 \$ 446,900

<u>TOWN</u>	<u>PERCENTAGE SHARE</u>	<u>I/I REDUCTION ASSESSMENTS</u>	<u>PERCENTAGE SHARE</u>	<u>MODIFIED FACILITY DESIGN</u>	<u>TOTAL</u>
Bellingham	6.7	\$ 6,700	8.1	\$ 28,100	\$ 34,800
Franklin	66.6	66,600	74.4	258,100	324,700
Medway	15.5	15,500	10.3	35,730	51,230
Millis	11.2	11,200	5.7	19,770	30,970
Sherborn	0.0	0	0.6	2,080	2,080
Norfolk	<u>0.0</u>	<u>0</u>	<u>0.9</u>	<u>3,120</u>	<u>3,120</u>
Total	100.0	\$ 100,000	100.0	\$ 346,900	\$ 446,900



# Charles River Pollution Control District

Serving the Towns of Franklin, Medway, Millis, Bellingham and Norfolk

## FRANKLIN COMMISSIONERS

Lee W. Robbins  
Albert R. Brunelli  
Roger A. Rondeau, Chairman

66 Village Street  
Medway, Massachusetts 02053  
TEL (508) 533-6762  
FAX (508) 533-7652

## MEDWAY COMMISSIONERS

Paul R. Wilson  
Paul J. DeSimone

### CERTIFICATION OF VOTE

I, Barbara Maffeo, Executive Secretary, of the Charles River Pollution Control District, hereby certify that at a meeting of the District, duly called and held on Thursday, November 13, 1997 where 3 of the 5 Commissioners were present and voting, constituting a quorum, the following vote was unanimously approved:

“VOTED: That the District hereby amends on this date, November 13, 1997, The Charles River Pollution Control District’s Water Pollution Abatement Plan dated October, 1979 and amended November, 1979 and October, 1982 to include the design and construction of the Modification of the District’s Treatment Facility to increase it’s design capacity to 5.704 MGD at an anticipated capital projects cost of \$15,540,000 to serve the District member towns of Franklin and Medway and the customer towns of Millis, Bellingham, Norfolk, Sherborn and Dover.”

A True Copy,

Attest:

  
Paul R. Wilson, Clerk

November 13, 1997

**EXHIBIT F**  
**November 13, 1998 CDM Letter regarding Capacity Allocations**  
**[Attached]**

November 13, 1998

Mr. Paul R. Wilson  
Chairman  
Charles River Pollution Control District  
66 Village Street  
Medway, Massachusetts 02053

Subject: Present Value and Capacity Allocations of District Facilities

Dear Mr. Wilson:

In accordance with the terms of our Agreement with the District dated May 14, 1998, we submit, herewith, our technical memorandum which summarizes our findings relative to the replacement value and present value of the District's facilities, the current capacity allocations and possible cost apportionments for potential customers for existing and new District facilities.

*Introduction*

The objective of this memorandum is to determine the estimated current value and replacement value of the District's existing facilities, establish the amount of plant capacity available to members, customers and potential customers of the District, to estimate the cost of purchase of existing capacity in District facilities and to estimate the type and cost of capital improvements required if expansion of facilities were to be allowed by regulatory agencies.

*Plant Capacity Analysis*

*A. Existing Treatment Plant (4.54 million gallons per day (mgd) capacity)*

The existing wastewater treatment plant was designed for the treatment of wastewater from the Towns of Franklin and Medway in accordance with the criteria set forth in the "Charles River Pollution Control District Wastewater Treatment Facilities Design Memoranda" dated September 1974 by Camp Dresser & McKee Inc. These memoranda established the design average daily flow to the treatment plant as:

- Town of Franklin . . . . . 3.69 mgd
- Town of Medway . . . . . 0.85 mgd
- "District" Total . . . . . 4.54 mgd (for a design year of 1998)

Over the years, the Towns of Franklin and Medway have sold portions of their capacity to other communities. Table 1 indicates the history of treatment plant capacity allocations (ownership) from 1974 to the present.

Mr. Paul R. Wilson  
November 13, 1998  
Page 2

*B. Plant Modification to 5.70 mgd*

The District's Phase 1A Facilities Plan, dated September 1995, prepared by Camp Dresser & McKee Inc., recommended that the treatment plant be modified to a 5.70 mgd capacity in order to meet the projected wastewater flows and loads expected from existing member and customer communities over the 20-year planning period between 1995 and 2015. The projected flows and loads were based on data received from the Towns of Franklin, Bellingham, Medway and Millis.

The Secretary of Environmental Affairs by letter of April 9, 1997 and the Department of Environmental Protection (DEP) by letter of February 3, 1998 approved the plant modification with the restriction that the increase in capacity will not result in the discharge of pollutants above the currently permitted National Pollutant Discharge Elimination System (NPDES) limits. In essence this means that the plant may increase its discharge flow by 25.5 percent (from 4.54 mgd to 5.7 mgd), but to do this the plant treatment efficiency must increase by 25.5 percent in order to stay within its current NPDES mass loadings permit limits.

Table 2 indicates the treatment plant capacity allocation for the modified plant (5.7 mgd) with the increase in capacity being allocated 80 percent to Franklin and 20 percent to Medway.

*Replacement Value of Facilities*

Tables 3 through 7 represent the "as constructed cost" of various District facilities and the "updated estimated replacement value" of these facilities as of June 1999. Costs were updated using the Engineering News Record Cost Index at the time of construction and a projected index for June 1999.

Figure 1 is a schematic representation of facilities and values indicated in Tables 3 through 7.

*Present Value of Facilities*

The present or "remaining" value of District Facilities is represented in the upper half of Tables 8 and 9. The remaining value has been calculated with an asset life basis of 45 years for Treatment Facilities and 75 years for Pipelines.

*Purchase of Capacity in Existing Facilities*

The District's existing treatment facilities will have a rated capacity of 5.7 mgd when the ongoing modifications are complete. Current estimates of flow from existing District member and customer communities indicate a need for the full 5.7 mgd capacity. Since the full capacity of the existing treatment facilities is committed to existing member and customer communities, any additional flow to the treatment facilities will require an expansion and increase in the rated (permitted) capacity of the plant.

Mr. Paul R. Wilson  
November 13, 1998  
Page 3

Table 8 presents the 1999 estimated "Buy-In" value (or purchase cost) of existing District facilities needed to convey and treat 1.0 mgd of wastewater discharged into the Chicken Brook Connector pipe, IF the treatment plant capacity were to be increased from 5.7 mgd to 6.7 mgd. The \$5,461,000 "Buy-In" cost represents the estimated 1999 purchase cost for existing facilities only, there will also be a cost for expansion of the plant. The expansion cost is estimated at \$4,050,000 as shown in Table 10. The \$4,050,000 cost shown in Table 10 is based on the same form of treatment now used at the plant with an adjustment in the NPDES permit to reflect the increased flows and loads resulting from the additional 1.0 mgd of flow.

Table 9 presents an estimate of "Buy-In" value of existing facilities if the 1.0 mgd of flow were split and discharged at two locations; 0.5 mgd to the Chicken Brook Connector and 0.5 mgd to the Black Swamp Interceptor in Route 109 at the Medway-Millis town line.

We are prepared to meet with you to review and discuss this material with you at your convenience.

Very truly yours,

CAMP DRESSER & MCKEE INC.



William E. Mackey, Jr.  
Senior Vice President

WEM/dmd

cc: Patrick D. Hughes, CDM

**TABLE 1**  
**CHARLES RIVER POLLUTION CONTROL DISTRICT**  
**ALLOCATION OF TREATMENT PLANT CAPACITY**  
**(Updated September 1998)**

The flow tabulations in the following summary reflect the history of treatment plant allocations from 1974 to 1998.

**1. Original Allocation—1974**

Franklin	3.69 mgd
Medway	<u>0.85 mgd</u>
TOTAL	4.54 mgd

**2. After Allocation of 0.5 mgd to Millis—1983**

Franklin	3.29 mgd
Medway	0.75 mgd
Millis	<u>0.50 mgd</u>
TOTAL	4.54 mgd

**3. After Allocation of 0.048 mgd to Norfolk—1983  
(For Treatment of Septage)**

Franklin	3.242 mgd
Medway	0.75 mgd
Millis	0.50 mgd
Norfolk	<u>0.048 mgd</u>
TOTAL	4.54 mgd

**4. After Allocation of 0.3 mgd to Bellingham—1985**

Franklin	3.002 mgd
Medway	0.69 mgd
Millis	0.50 mgd
Norfolk	0.048 mgd
Bellingham	<u>0.30 mgd</u>
TOTAL	4.54 mgd

**5. After Allocation of 0.025 mgd to Sherborn  
(For Treatment of Septage)—1995**

Franklin	2.977 mgd
Medway	0.690 mgd
Millis	0.500 mgd
Norfolk	0.048 mgd
Bellingham	0.300 mgd
Sherborn	<u>0.025 mgd</u>
TOTAL	4.54 mgd

**6. After Allocation of 0.025 mgd to Dover  
(For Treatment of Septage)—1997**

Franklin	2.977 mgd
Medway	0.665 mgd
Millis	0.500 mgd
Norfolk	0.048 mgd
Bellingham	0.300 mgd
Sherborn	0.025 mgd
Dover	<u>0.025 mgd</u>
TOTAL	4.54 mgd

**TABLE 2**  
**CHARLES RIVER POLLUTION CONTROL DISTRICT**  
**WASTEWATER TREATMENT PLANT CAPACITY ALLOCATION**

<u>Town</u>	<u>Capacity Owned-1998 Millions of Gallons per Day (mgd)</u>	<u>Capacity Allocated with Plant Modification to 5.70 mgd</u>
Franklin	2.977	3.907 **
Medway	0.665	0.895 **
Millis	0.500	0.500
Bellingham	0.300	0.300
Norfolk*	0.048	0.048
Sherborn*	0.025	0.025
Dover*	<u>0.025</u>	<u>0.025</u>
<b>TOTAL</b>	<b>4.54</b>	<b>5.70</b>

\* Septage equivalent.

\*\* Allocation of increase in capacity based on plant ownership ratio of, 80 percent Franklin and 20 percent Medway.

**TABLE 3  
CHICKEN BROOK CONNECTOR**

**Charles River Pollution Control District  
Facilities Cost/Value Summary**

**Chicken Brook Connector — C4  
Constructed 1978/79**

Construction Cost		\$350,875.65
Other Costs		
■ Report & Design by Town of Medway —	--	
■ Bidding	\$ 1,476.42	
■ Construction Phase Engineering	\$ 8,330.00	
■ Resident Engineer Services	\$41,216.20	
■ Special Services/Construction	\$ 3,650.00	
■ Materials Testing	\$ 1,030.40	
■ Record Drawings	<u>\$ 500.00</u>	
Subtotal	\$56,203.02	<u>\$ 56,203.02</u>
 TOTAL PROJECT COST 1978/79		 \$407,078.67
 Estimated Value June 1999 (ENR Ratio 2.5925)		
\$407,000 x 2.5925 =		\$1,055,000.00 *

\* For CRPCD Chicken Brook Connector only. Chicken Brook Interceptor is a Town of Medway Pipeline.

**TABLE 4**  
**CHARLES RIVER INTERCEPTOR & OUTFALL**

**Charles River Pollution Control District  
Facilities Cost/Value Summary**

**Charles River Interceptor & Outfall — C2  
Constructed 1978/79**

Construction Cost		\$3,613,028.00
Other Costs		
■ 40% of Field Surveys	\$ 26,349.17	
■ 1/3 Site & Easement Surveys	\$ 7,498.98	
■ 25% Land & Easement Costs	\$ 35,602.50	
■ 1/3 Subsurface Exploration Costs	\$ 9,235.59	
■ 20% Bonding Costs	\$ 12,934.00	
■ Design	\$159,797.86	
■ Construction Phase Engineering	\$ 40,827.21	
■ Resident Engineer Services	\$140,246.71	
■ Record Drawing	\$ 5,046.72	
■ 50% Permits & Applications (Interceptors)	\$ 11,677.84	
■ 1/3 Archaeological Survey	\$ 2,693.90	
■ 1/3 Federal Grant Payment Request	\$ 2,776.30	
■ Materials Testing	<u>\$ 30,353.81</u>	
Subtotal	\$485,040.59	<u>\$ 485,040.59</u>
 TOTAL PROJECT COST 1978/79		 \$4,098,068.50

Cost-Plant to Chicken Brook Interceptor

$$\frac{12,692.7}{17,359} \times \$4,098,000.00 = \$2,996,410$$

Estimated Value June 1999 (ENR Ratio 2.5925)

$$\$2,996,410 \times 2.5925 = \$7,769,000.00$$

**TABLE 5**  
**WASTEWATER TREATMENT PLANT**

**Charles River Pollution Control District**  
**Facilities Cost/Value Summary**

**Wastewater Treatment Plant & Pump Station; Plant/Vehicles;**  
**Odor Control Equipment — C-1; C-1A; C-1B**  
**Constructed 1978/79**

Construction Cost

■ Plant — C-1	\$13,699,707.25	
■ Vehicles C-1A	\$ 133,038.00	
■ Odor Control Equipment	<u>\$ 170,624.00</u>	
Subtotal Construction	\$14,003,369.25	\$14,003,369.25

Other Costs

■ 20% Field Surveys	\$ 13,174.58	
■ 1/3 Site & Easement Surveys	\$ 7,498.98	
■ 50% Land & Easement Costs	\$ 71,205.00	
■ 70% Bonding Costs	\$ 45,269.00	
■ Legal Fees C-1	\$ 16,316.00	
■ Miscellaneous Equipment	\$ 19,905.00	
■ 1/3 Archaeological Survey	\$ 2,693.00	
■ 1/3 Subsurface Exploration	\$ 9,235.00	
■ Preliminary Design Analysis	\$ 50,000.00	
■ Infiltration Studies	\$ 14,129.23	
■ Miscellaneous Special Services	\$ 81,119.93	
■ Design	\$ 579,511.12	
■ Construction Phase Engineering	\$ 158,995.96	
■ Resident Engineering Services	\$ 385,239.57	
■ Record Drawings	\$ 9,484.89	
■ Federal Permits & Application	\$ 16,303.95	
■ Materials Testing	\$ 26,886.26	
■ O&M Manual	\$ 35,987.52	
■ O&M Advisory Services	\$ 43,983.53	
■ Application for Discharge Permit	\$ 1,530.73	
■ Construction Phase Engineering — Extended	\$ 73,173.15	
■ Arbitration Costs	\$ 4,796.44	
■ Design — Odor Control	\$ 18,690.96	
■ Construction Phase Engineering Odor Control	\$ 1,255.69	
■ 1/3 Federal Grant Payment Requests	<u>\$ 2,776.30</u>	
Subtotal	\$1,689,162.35	<u>\$1,689,162.35</u>

TOTAL PROJECT COST 1978/79

\$15,692,531.60

Estimated Value June 1999 (ENR Ratio 2.5925)

\$15,693,000 x 2.5925 =

\$40,600,000.00

**TABLE 6**  
**WASTEWATER TREATMENT PLANT IMPROVEMENTS**

**Charles River Pollution Control District**  
**Facilities Cost/Value Summary**

**Various Capital/Improvements; Additions & Modifications at Plant**  
**From 1982 to 1997 (Say Average Date 1989)**

Construction & Other Costs

■ Odor Control Equipment, Installation	\$ 3,570.00
■ Sludge Landfill Evaluation	\$ 11,580.00
■ Bar Screen Addition — Engineering	\$ 28,900.00
■ Construction Mechanical Bar Screen	\$ 90,300.00
■ Grit Tank Covers — Engineering	\$ 20,900.00
■ Grit Tank Covers — Construction	\$ 47,800.00
■ Operations Assistant	\$ 2,325.00
■ Lab Training	\$ 7,096.00
■ Sludge Landfill Closure Plan	\$ 15,000.00
■ Sludge Landfill Improvements	\$ 24,500.00
■ Construction Landfill Improvements	\$ 82,000.00
■ Industrial Pretreatment Study	\$ 148,500.00
■ Copper Evaluation Study	\$ 85,000.00
■ Process Modification Engineering	\$ 4,000.00
■ Landfill Access Road	\$ 8,500.00
■ Dechlorination Evaluation & Design	\$ 103,000.00
■ Clarifier/Filter Improvements	\$ 30,000.00
■ Jib Crane	\$ 17,000.00
■ Chlorine Contact Chamber Drains	\$ 45,000.00
■ Septage Tank Improvements	\$ 9,000.00
■ Dechlorination Facility Additions	\$ 200,000.00
■ Construction Phase Engineering	\$ 54,000.00
■ Sludge Management Study	\$ 41,700.00
■ Plant Treatment Capacity Analysis	\$ 49,500.00
■ Equipment Purchases	\$ 91,700.00
■ Odor Control System B	\$ 61,100.00
■ Odor Control Engineering	\$ 4,600.00
■ Phase I Facilities Planning	<u>\$ 48,500.00</u>
Subtotal	<u>\$1,335,071.00</u>

TOTAL PROJECT COST (AVERAGE YEAR 1989)

\$1,335,071.00

Estimated Value June 1999 (ENR Ratio 1.3028)

\$1,335,000 x 1.3028 =

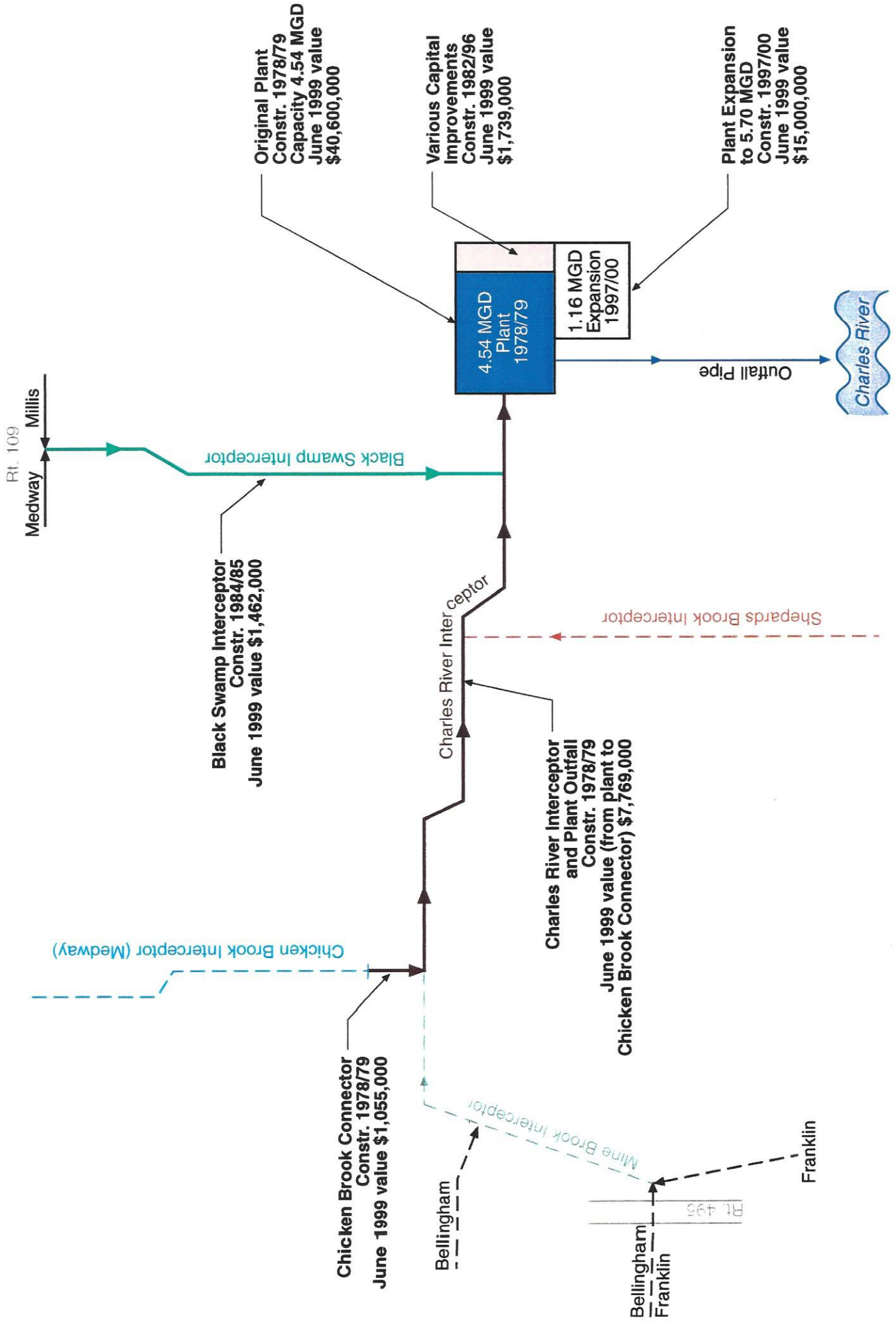
\$1,739,000.00

**TABLE 7**  
**BLACK SWAMP INTERCEPTOR**

**Charles River Pollution Control District**  
**Facilities Cost/Value Summary**

**Black Swamp Interceptor**  
**Constructed 1984/85**

Construction Cost		\$602,329.35
Other Costs		
■ Report	\$ 46,000.00	
■ Permits & Applications	\$ 5,355.00	
■ Design	\$ 50,129.84	
■ Special Services/Design	\$ 41,679.31	
■ Construction Phase Engineering	\$ 17,499.98	
■ Special Services/Construction	\$ 31,759.90	
■ Resident Engineer Services	<u>\$ 83,720.44</u>	
Subtotal	\$276,144.47	<u>\$276,144.47</u>
TOTAL PROJECT COST 1984/85		\$878,473.82
Estimated Value June 1999 (ENR Ratio 1.665)		
\$878,000 x 1.665 =		\$1,462,000.00



**Figure 1**  
**Charles River Pollution Control District Facilities Schematic**

**TABLE 8**  
**"BUY-IN" COST EVALUATION FOR EXISTING FACILITIES**  
**FOR PLANT EXPANDED TO 6.7 MGD**

**Charles River Pollution Control District**  
**"Buy-In" Cost Evaluation - Flow via Chicken Brook Connector**

For 1.0 million gallons per day (mgd); connected to the District's Chicken Brook Connector

Asset Life Basis: Treatment Facilities 45 years, Pipelines 75 years

<i>Facility</i>	<i>Type</i>	<i>Year in Service</i>	<i>1999 Total Replacement Value</i>	<i>Remaining Useful Life Years</i>	<i>Remaining Value</i>
1. Chicken Brook Connector	Pipe	1980	\$1,055,000	56	\$790,000
2. Charles River Interceptor	Pipe	1980	\$7,769,000	56	\$5,800,000
3. Original Plant (4.54 mgd)	Plant	1980	\$40,600,000	26	\$23,460,000
4. Plant Improvements	Plant	1989	\$1,739,000	35	\$1,350,000
5. Plant Expansion (to 5.70 mgd)	Plant	1999	\$7,500,000*	45	\$7,500,000

\*\$15,000,000 cost reduced by 75% grant equivalency (approximate).

**"Buy-In" Cost for 1.0 mgd of Capacity in Existing Facilities if Plant is Expanded from 5.7 to 6.7 mgd**

1. Chicken Brook Connector: Design Average Flow = ( $Q_A$ ) = 4.77 mgd

$$\frac{1}{4.77} \times \$790,000 = \$165,600$$

2. Charles River Interceptor and Outfall  $Q_A = 12.26$  mgd

$$\frac{1}{12.26} \times \$5,800,000 = \$473,000$$

3. Original Plant  $Q_A = 4.54$  mgd + 1.16 mgd Expansion  
+ 1.0 mgd Additional = 6.7 mgd

$$\frac{1}{6.7} \times \$23,460,000 = \$3,501,500$$

4. Plant Improvements  $Q_A = 4.54$  mgd + 1.16 mgd Expansion  
+ 1.0 mgd Additional = 6.7 mgd

$$\frac{1}{6.7} \times \$1,350,000 = \$201,500$$

5. Plant Modification  $Q_A = 5.70$  mgd + 1.0 mgd Additional = 6.7 mgd

$$\frac{1}{6.7} \times \$7,500,000 = \$1,119,400$$

**TOTAL BUY-IN COST FOR 1.0 MGD = \$5,461,000 \*\***

\*\*See Table 10 for cost of additional facilities required for added flow.

**TABLE 9**  
**"BUY-IN" COST EVALUATION FOR EXISTING FACILITIES**  
**FOR PLANT EXPANDED TO 6.7 MGD**

**Charles River Pollution Control District**  
**"Buy-In" Cost Evaluation - Flow via Black Swamp Interceptor & Chicken Brook**  
**Connector**

For 0.5 million gallons per day (mgd); connected to the District's Black Swamp Interceptor and 0.5 mgd connected to the Chicken Brook Connector.

Asset Life Basis: Treatment Facilities 45 years, Pipelines 75 years

<u>Facility</u>	<u>Type</u>	<u>Year in Service</u>	<u>1999 Total Replacement Value</u>	<u>Remaining Useful Life Years</u>	<u>Remaining Value</u>
1. Chicken Brook Connector	Pipe	1980	\$1,055,000	56	\$790,000
2. Black Swamp Interceptor	Pipe	1985	\$1,462,000	61	\$1,190,000
3. Charles River Interceptor	Pipe	1980	\$5,974,000	56	\$4,460,000
4. Outfall	Pipe	1980	\$1,795,000	56	\$1,340,000
5. Original Plant (4.54 mgd)	Plant	1980	\$40,600,000	26	\$23,460,000
6. Plant Improvements	Plant	1989	\$1,739,000	35	\$1,350,000
7. Plant Expansion (to 5.70 mgd)	Plant	1999	\$7,500,000*	45	\$7,500,000

\*\$15,000,000 cost reduced by 75% grant equivalency (approximate).

**"Buy-In" Cost for 1.0 mgd of Capacity in Existing Facilities (0.5 mgd to Black Swamp and 0.5 mgd to Chicken Brook Connector)**

1. Chicken Brook Connector					
	$\frac{0.5}{4.77}$	x \$790,000 =			\$82,800
2. Black Swamp Interceptor: Design Average Flow = (Q <sub>A</sub> ) = 1.48 mgd					
	$\frac{0.5}{1.48}$	x \$1,190,000 =			\$402,000
3. Charles River Interceptor Q <sub>A</sub> = 12.26 mgd					
	$\frac{0.5}{12.26}$	x \$4,460,000 =			\$181,900
4. Outfall					
	$\frac{1.0}{12.26}$	x \$1,340,000 =			\$109,300
5. Original Plant Q <sub>A</sub> = 4.54 mgd + 1.16 mgd Expansion + 1.0 mgd Additional = 6.7 mgd					
	$\frac{1}{6.7}$	x \$23,460,000 =			\$3,501,500
6. Plant Improvements Q <sub>A</sub> = 4.54 mgd + 1.16 mgd Expansion + 1.0 mgd Additional = 6.7 mgd					
	$\frac{1}{6.7}$	x \$1,350,000 =			\$201,500
7. Plant Modification Q <sub>A</sub> = 5.70 mgd + 1.0 mgd Additional = 6.7 mgd					
	$\frac{1}{6.7}$	x \$7,500,000 =			<u>\$1,119,400</u>
<b>TOTAL BUY-IN COST FOR 1.0 MGD =</b>					<b>\$5,598,400 **</b>

\*\*See Table 10 for cost of additional facilities required for added flow.

**TABLE 10**  
**ADDITIONAL FACILITIES REQUIRED TO**  
**EXPAND PLANT TO 6.7 MGD CAPACITY**

<u>Item</u>	<u>Estimated Cost*</u>
1. Additional Aeration Tanks, Blowers & Accessories	\$3,000,000
2. Additional Filter Capacity	\$ 50,000
3. Second Gravity Belt Thickener	\$ 500,000
4. Modifications to Chemical Feed Systems	\$ 200,000
5. Modifications to Influent Pumping System	<u>\$ 300,000</u>
<b>TOTAL ESTIMATED COST</b>	<b>\$4,050,000</b>

\* These estimates are approximate and subject to revision when actual flows and loads are established.