

Department of Public Utilities (formerly DTE)

DEPARTMENT OF PUBLIC UTILITIES
D.P.U. 95-118

Docket No.: D.P.U. 95-118

Date: May 31, 1996

Parties: 95-118 [Mass.-American Water Co.]

Investigation by the Department on its own motion as to the propriety of the rates and charges set forth in the following tariff: M.D.P.U. No. 1, Revision Sheet Nos. 1A, 1B, 2, 3, 4, and newly created Sheet Nos. 6 and 7, filed with the Department on November 16, 1995 to become effective December 1, 1995 by Massachusetts-American Water Company.

Appearing: Thomas G. Tumilty, Esq.

Peabody & Brown
101 Federal Street
Boston, Massachusetts 02110-1830
FOR: MASSACHUSETTS-AMERICAN WATER COMPANY
Petitioner

James A. Toomey, Esq.
Murphy, Hesse, Toomey & Lehane
300 Crown Colony Drive
Suite 210
P.O. Box 9126
Quincy, Massachusetts 02269-9126
FOR: TOWN OF HINGHAM
Intervenor

James B. Lampke, Esq.
Town of Hull
115 North Street
Hull, Massachusetts 02043
FOR: TOWN OF HULL
Intervenor

Jeanne S. McKnight, Esq.
Kopelman & Paige
31 St. James Street
Boston, Massachusetts 02116
FOR: TOWN OF OXFORD
Intervenor

Paul R. DeRensis, Esq.
Deutsch, Williams, Brooks, DeRensis, Holland & Drachman
99 Summer Street
Boston, Massachusetts 02110
FOR: TOWN OF COHASSET
Limited Participant

D.P.U. 95-118

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. WATER TREATMENT FACILITIES PROJECT	4
A. Introduction	4
1. State and Federal Water Quality Standards	4

- 2. System Compliance With SDWA and DEP Requirements 5
- B. General Project Description 7
 - 1. Water Treatment Plant 7
 - 2. Off-Site Piping 9
 - 3. Accord Pond/Fulling Mill Modifications 9
 - 4. Overall Project Cost 10
- C. Project History 11
 - 1. Free Street Site 11
 - 2. Main Street 1 14
 - 3. Main Street 2 15
 - 4. Accord Pond/Fulling Mill Modifications 21
 - 5. Off-Site Piping 21
- D. Intervenors' Analysis 22
 - 1. Hingham 22
 - a. Free Street Permit Process 22
 - b. Main Street Permit Process 23
 - c. Construction of WTP 23
 - 2. Hull 27
- E. Positions of the Parties 28
 - 1. Hingham and Hull 28
 - a. Standard of Review 28
 - b. Water Treatment Plant 28
 - c. Accord Pond/Fulling Mill/Off-Site Piping 32
 - 2. Oxford 32
 - 3. Cohasset 33
 - a. Standard of Review 33
 - b. Water Treatment Plant 33
 - 4. Company 34
 - a. Standard of Review 34
 - b. Water Treatment Plant 34
- F. Analysis and Findings 39
 - 1. Standard of Review 39
 - a. Prudent, Used and Useful 39
 - b. Post-Test Year Additions 40
 - c. Affiliated Transactions 41
 - d. Conclusion 42
 - 2. Water Treatment Plant 42

D.P.U. 95-118

TABLE OF CONTENTS

	Page
a. Basis of Cost Differences	42
b. Need for Water Treatment Plant	43
c. Free Street Site	45
d. Main Street 1 and 2 Permitting	46
e. Construction of Main Street 2	49
f. Affiliated Transactions	55
g. Used and Useful	55
3. Accord Pond/Fulling Mill/Off-Site Piping	56
4. Conclusion	57

57

- III. PROJECT FINANCING 58
 - A. Description of the Company's Financing of the WTP 58
 - B. Position of the Parties 65
 - 1. Joint Hingham and Hull 65
 - 2. Cohasset 69
 - 3. Company 69
 - C. Standard of Review 73

- D. Analysis and Findings 76
- IV. REVENUES 80
 - A. Merchandising and Jobbing Revenues 80
 - 1. Company Proposal 80
 - 2. Positions of the Parties 81
 - a. Joint Hingham and Hull 81
 - b. Company 81
 - 3. Analysis and Findings 81
 - B. Service Fee Increases 82
 - 1. Company Proposal 82
 - 2. Positions of the Parties 83
 - 3. Analysis and Findings 83
- V. RATE BASE 84
 - A. Post-Test Year Additions 84
 - 1. Introduction 84
 - 2. Positions of the Parties 85
 - 3. Analysis and Findings 85
 - B. Computer System 86
 - 1. Introduction 86
 - 2. Positions of the Parties 87
 - a. Joint Hingham and Hull 87
 - b. Company 87
 - 3. Analysis and Findings 88

D.P.U. 95-118

TABLE OF CONTENTS

	Page
VI. EXPENSES	89
A. Employee Compensation Expense	89
1. Payroll Expense	89
2. Group Insurance Expense	90
3. Positions of the Parties	90
a. Joint Hingham and Hull	90
b. Company	91
4. Analysis and Findings	92
a. Union Payroll	92
b. Nonunion Payroll	93
c. Group Insurance Expense	93
d. Reasonableness of Employee Compensation Expenses	94
B. AWW Service Charges	96
1. Introduction	96
2. Positions of the Parties	99
3. Analysis and Findings	99
C. Post Retirement Benefits Other Than Pensions	102
1. Background	102
2. company Proposal	103
a. Annual PBOP Expense	104
i. Positions of the Parties	104
(A) Joint Hingham and Hull	104
(B) company	104
ii. Analysis and Findings	105
b. Deferred PBOP Costs	107
i. Positions of the Parties	107
(A) Joint Hingham and Hull	107
(B) Company	107
ii. Analysis and Findings	107
D. Pension Expense	108
1. Background	108
2. Company Proposal	109

a. Annual Pension Expense . . . . .	.110
i. Positions of the Parties . . . . .	.110
ii. Analysis and Findings . . . . .	.110
b. Deferred Pension Expenses . . . . .	.111
i. Positions of the Parties . . . . .	.111
(A) Joint Hingham and Hull . . . . .	.111
(B) Company . . . . .	.111
ii. Analysis and Findings . . . . .	.112
E. Chemical Expense . . . . .	.113
1. Introduction . . . . .	.113
2. Position of the Parties . . . . .	.113

D.P.U. 95-118

TABLE OF CONTENTS

	Page
3. Analysis and Findings	113
F. Rate Case Expense	115
1. Introduction	115
2. Positions of the Parties	115
a. Joint Hingham and Hull	115
b. Company	116
3. Analysis and Findings	117
G. Well Maintenance Expense	120
1. Company Proposal	120
2. Positions of the Parties	121
3. Analysis and Findings	121
H. Tank Maintenance Expense	123
1. Company Proposal	123
2. Positions of the Parties	124
3. Analysis and Findings	124
I. Amortization of Pipeline Design	125
1. Introduction	125
2. Positions of the Parties	126
a. Oxford	126
b. Joint Hingham and Hull	126
c. Company	126
3. Analysis and Findings	127
J. Savings From Proposed Merger	128
1. Introduction	128
2. Positions of the Parties	128
a. Oxford	128
b. Company	129
3. Analysis and Findings	130
K. Depreciation Expense	131
1. Introduction	131
2. Positions of the Parties	131
a. Joint Hingham and Hull	131
b. Oxford	132
c. Company	132
3. Analysis and Findings	132
L. Income Taxes	133
1. Income Tax Rates	133
a. Company Proposal	133
b. Positions of the Parties	134
c. Analysis and Findings	134
2. Deferred Income Taxes	134
3. Amortization of Excess Deferred Income Taxes	135
M. Uncollectible Expense	135

D.P.U. 95-118

TABLE OF CONTENTS

	Page
1. Introduction	135
2. Position of the Parties	135
3. Analysis and Findings	135
N. Office Rent	136
1. Introduction	136
2. Positions of the Parties	136
a. Joint Hingham and Hull	136
b. Company	137
3. Analysis and Findings	138
O. Sale of Office Building	140
1. Introduction	140
2. Positions of the Parties	141
a. Joint Hingham and Hull	141
b. Company	142
3. Analysis and Findings	142
P. Charitable Contributions	144
1. Introduction	144
2. Positions of the Parties	144
3. Analysis and Findings	144
Q. Treatment Facility Operating Costs	145
1. Introduction	145
2. Position of the Parties	146
a. Hingham	146
b. Hull	146
c. Cohasset	146
d. Company	147
3. Analysis and Findings	147
VII. CAPITAL STRUCTURE AND RATE OF RETURN	149
A. Capital Structure	149
1. Introduction	149
2. Positions of the Parties	149
3. Analysis and Findings	149
B. Cost of Debt	149
1. Introduction	149
2. Positions of the Parties	149
3. Analysis and Findings	150
C. Return on Common Equity	150
1. Company Proposal	150
2.	
Positions of the Parties	150
a. Joint Hingham and Hull	150
b. Company	150
3. Analysis and Findings	151

D.P.U. 95-118

TABLE OF CONTENTS

	Page
VIII. RATE DESIGN	152
A. Introduction	152
B. Cost of Service Study	153
1. Introduction	153
2. Hull Proposal	156
3. Positions of the Parties	157
a. Joint Hingham and Hull	157
b. Company	158
4. Analysis and Findings	159
a. Validity of 1989 COSS and 1994 Update	159
b. Storage Facilities Allocator	161

- c. Allocation of Hydrant Charges to Fire Protection Service 163
 - d. Conclusion 163
 - C. Metered Rate Design 163
 - 1. Introduction 163
 - 2. Company Proposal 164
 - a. Base Metered Rates 164
 - b. Surcharge Rate Design 164
 - 3. Hull Proposal 165
 - 4. Positions of the Parties 167
 - a. Joint Hingham and Hull 167
 - b. Hull 168
 - c. Hingham 169
 - d. Cohasset 170
 - e. Company 171
 - 5. Analysis and Findings 172
 - a. Base Metered Rates 172
 - b. Surcharge Rate Design 174
 - D. Fire Protection Rates 176
 - 1. Introduction 176
 - 2. Company Proposal 177
 - 3. Hull Proposal 178
 - 4. Positions of the Parties 179
 - a. Joint Hingham and Hull 179
 - b. Oxford 179
 - c. Company 180
 - 5. Analysis and Findings 180
- IX. QUALITY OF SERVICE 181
 - A. Positions of the Parties 181
 - 1. Joint Hingham and Hull 181
 - 2. Company 182
 - B. Analysis and Findings 183

D.P.U. 95-118

TABLE OF CONTENTS

	Page
X. SCHEDULES	185
XI. ORDER	197

D.P.U. 95-118

Page 1

I. INTRODUCTION

On November 16, 1995, Massachusetts-American Water Company ("Mass-Am" or "Company"), pursuant to G.L. c. 164, s. 94 and G.L. c. 165, s. 2, filed with the Department of Public Utilities ("Department") a petition to increase its rates by \$5,711,056 representing an overall rate increase of 98.09 percent to become effective December 1, 1995. Of this amount, \$1,525,552, representing an increase of 26.4 percent, would be applicable to all of the Company's customers. The remaining increase of \$4,185,504 -- proposed to cover the lease and operational costs associated with the Company's new water treatment plant ("WTP") in Hingham, Massachusetts -- would be applicable to customers in the towns of Hingham ("Hingham"), Hull ("Hull"), northern Cohasset ("Cohasset"), and Norwell (collectively referred to as "Service Area A"). The petition was docketed as D.P.U. 95-118, and the

proposed rates were suspended until June 1, 1996.

The Company is a retail water utility and a wholly owned subsidiary of Greenwich Water Systems, Inc. ("GWS"), [1] which is a wholly owned subsidiary of American Water Works Company ("AWW"). [2] Mass-Am serves approximately 16,588 customers in two districts: Service Area A and the towns of Millbury and Oxford ("Oxford") (collectively referred to as "Service Area B"). The Company last received a rate increase by Order dated December 21, 1990. Massachusetts-American Water Company, D.P.U. 90-146 (1990).

[1] GWS is an unregulated sub-holding company (Annual Report at 23).

[2] The principal business of AWW is the ownership of common stock of companies providing water supply service (Annual Report at 23). AWW has 23 operating subsidiaries, including Mass-Am, which sell water at retail in approximately 750 communities in 21 states (id.)

D.P.U. 95-118

Page 2

Pursuant to notice duly issued, the Department conducted three public hearings in Hingham, Oxford, and Hull on January 3, 4, and 29, 1996, respectively, to afford interested persons an opportunity to be heard. The Department stated that any person who desired to participate in the adjudicatory proceeding concerning the Department's investigation had to file a written petition for leave to intervene or to participate in the proceeding with the Department no later than December 27, 1995. Hingham and Hull filed timely petitions to intervene. Late-filed petitions to intervene were filed by Oxford [3] and Cohasset. The Department granted Hingham, Hull, and Oxford full intervention status. The Department granted limited participant status to Cohasset. [4]

Thirteen days of evidentiary hearings were held at the offices of the Department, beginning March 14, 1996, and ending April 10, 1996. [5] [6] Additionally, on March 30, 1996, the Department

conducted a site inspection of the WTP and the Company's existing Free Street well field ("Free Street"), both in Hingham.

[3] Oxford filed its petition to intervene on January 2, 1996.

[4] On March 4, 1996, Cohasset filed a petition to intervene ("Petition"). Mass-Am filed an objection to the Petition on Mar. 16, 1996. On March 11, 1996, the Hearing Officer issued a ruling ("Ruling") denying the Petition and granting Cohasset limited participation rights, which consisted of filing a brief and presentation of oral argument of not more than twenty minutes at the close of evidentiary hearings. On March 15, 1996, Cohasset filed an appeal of the Ruling ("Appeal"). Mass-Am filed an objection to the Appeal on March 20, 1996. On April 9, 1996, the Department upheld the Ruling.

[5] On April 19, 1996, after the close of hearings, Mass-Am filed with the Department redesigned fire protection charges. On April 26, 1996, Hingham and Hull filed with the Department a Motion for Supplementary Hearing on Fire Protection Charges and for Supplementary Brief Schedule ("Motion"). The Motion was withdrawn

on May 6, 1996.

[6] On April 29, 1996, Oxford filed a Motion to Disallow Rate Request of Petitioner ("Oxford's Motion"). Oxford's Motion will be addressed in this Order.

D.P.U. 95-118

Page 3

In support of its filing, the Company presented seven witnesses: James M. Perry, president of Mass-Am; Rod Neviraskas, director of rates and revenue for the New England region of American Water Works Service Company ("AWW Service") and assistant comptroller for Mass-Am; Roger P. Frye, treasurer, secretary, and counsel to Mass-Am; David Livingstone, managing director of the public finance division of Smith Barney, Inc.; John S. Young, Jr., vice president of engineering for AWW Service; Stephen P. Schmitt, director of construction, system engineering for AWW Service; and Stephen P. Alcott, vice president of Guastella & Associates, a consulting firm. The Company sponsored the testimony of Elizabeth M. McCarthy, a partner at Price Waterhouse, LLP, as a rebuttal witness.

In its direct case, Hingham sponsored six witnesses: Joseph Stigliani, assistant superintendent of Hingham Department of Public Works; Mary Jean Shultz, administrator of the Hingham Zoning Board of Appeals ("Hingham ZBA"); Alan M. Silbovitz, vice president, Weston & Sampson, an engineering firm; John M. Little, a partner at Ernst & Young; Michael J. Puzo, a member of the Hingham Water Supply Committee ("HWSC"), and Martha J. Horn, a former member of the Hingham ZBA. Hingham called three rebuttal witnesses: Ms. Shultz; Bruce Capman, executive health officer of the Hingham Board of Health ("Board of Health"); and Pine Dubois, a member of the Hingham Conservation Commission ("Conservation Commission"). Hull sponsored the direct testimony of three witnesses: David Russell, principal, Russell Consulting Company; James Russo, chief of the

Hull Department of Fire, Rescue and Emergency Services; and Philip Lemnios, Hull Town Manager. Subsequent to a request by Hingham and Hull, two additional witnesses were made available by the Company: Robert J. Reimold, vice president, Metcalf & Eddy; and

D.P.U. 95-118

Page 4

Eugene Babin, an employee at Mass-Am. The Company, Hingham, Hull, and Cohasset presented oral arguments on the last day of hearings.

The evidentiary record includes 481 exhibits and 30 record requests. Initial briefs were filed by the Company, Hull, Hingham, Cohasset, and Oxford on April 29, 1996. [7] Reply briefs were filed on May 6, 1996, by the Company, Hull, and Hingham. In accordance with Department practice, the record remained open after the close of evidentiary hearings for the admission of certain information, including the Company's updated expense information, updates to certain Company schedules, and responses to record requests.

II. WATER TREATMENT FACILITIES PROJECT

A. Introduction

1. State and Federal Water Quality Standards

The Massachusetts Department of Environmental Protection ("DEP") is responsible for enforcement of the federal Safe Drinking Water Act ("SDWA") which sets forth drinking water standards including the Surface Water Treatment Rule ("SWTR") and the Secondary Standards which covers aesthetic requirements including

color, taste, and odor. G.L. c. 21, s. 17; c. 92, s. 17; c. 111, s. 160. See also, 310 C.M.R. s. 22.01. In addition, the United States Environmental Protection Agency is considering revisions to its regulations implementing the SDWA, such as the Enhanced Surface Water Treatment Rule ("ESWTR")

[7] Hingham and Hull filed joint initial and reply briefs on most issues and submitted separate initial briefs on rate design issues. The Order refers to the joint briefs as "Joint Intervenor Brief" and "Joint Intervenor Reply Brief," as applicable. The separate briefs are identified by the name of the party.

D.P.U. 95-118

Page 5

and the Disinfectant/Disinfection By-Product Rule ("D/DBPR"), [8] which are expected to affect the Company.

2. System Compliance With SDWA and DEP Requirements

In 1994, the Company's system demand in Service Area A [9] was 3.49 million gallons per day ("MGD"), with a maximum day demand of 6.47 MGD (Exh. MA-3, at 4-5). While average day demand is expected to remain relatively constant through the year 2010, maximum day demand is expected to increase to 7.19 MGD (id.) The relationship between average day demand and maximum day is attributed to the seasonal usage patterns for a predominantly residential service area and increased seasonal population through tourism (Exh. MA-3, at 4-5; DPU-11, at 2-10).

In order to meet customer demands in Service Area A, the Company relies on eight sources of supply: Accord Pond, Downing Street Well ("Downing Street"), Free Street Nos. 2, 3, and 4, [10] Fulling Mill Pond/Accord Brook ("Fulling Mill"), Prospect Street Well ("Prospect Street"), and Scotland Street Well ("Scotland Street") (Exh. DPU-60, sec. 3, at 5). The current total safe yield of all of the Company's sources in Service Area A, which represents the maximum sustainable yield that can be produced under drought conditions, is about 4.95 MGD (Exh. DPU-11, Table 3-1). Service Area A has a maximum

[8] The ESWTR is intended to tighten current disinfectant requirements for the removal of microorganisms, and the D/DBPR is intended to set new standards for disinfectants and disinfection byproducts (Exh. DPU-115, at 18-19).

[9] Because no issues have been raised in this proceeding with respect to system demands and resources in Service Area B, this section of the Order will only discuss Service Area A.

[10] Since the Company does not have possession or control over the DEP-required 400-foot radius around Free Street No. 4, this supply is only used on an emergency basis with the consent of the DEP (Exhs. DPU-11, at 3-6; MA-54).

D.P.U. 95-118

Page 6

day reliable capacity, which represents a system's ability to meet peak demand with its largest source out of service, of 4.13 MGD (Exh. MA-3, at 7). Therefore, according to the Company, there is

currently a deficit of 2.76 MGD, which is expected to increase to 3.06 MGD by the year 2010 (id.). In order to address maximum-day demand supply restrictions, the Company has in the past imposed mandatory water restrictions (Tr. 1, at 166).

The Company's primary sources, Accord Pond and Fulling Mill, are surface water supplies and thus subject to DEP's filtration requirements (Exh. MA-3, at 3). The Company's surface supplies are vulnerable to cryptosporidium and algae which raises issues regarding Mass-Am's compliance with Secondary Standards (Exh. DPU-57). Additionally, several of the Company's other sources of supply, including Free Street Nos. 2, 3, and 4, Scotland Street, and Prospect Street, are shallow gravel-packed wells which are considered to be potentially under the influence of groundwater, and thus also subject to filtration requirements (Exh. MA-3, at 9; Tr. 1, at 11-12, 181-182).

In addition to not meeting the filtration and disinfection requirements of the SWTR, several of the Company's ground sources do not meet a number of Secondary Standards (Exh. MA-1, at 3). Several of the Company's ground sources, including Downing Street, Free Street No. 2, Scotland Street, and Prospect Street have iron and manganese, as well as a high level of acidity (Exhs. DPU-57; MA-1, at 8-9). The Company's quality of service has been a long-standing issue (Exh. DPU-9). See also Hingham Water Company, D.P.U. 88-170, at 49-51 (1989); Hingham Water Company, D.P.U. 1590, at 4246 (1984); Hingham Water Company, D.P.U. 1118, at 30-31

(1983); Hingham Water Company, D.P.U. 322, at 14-16 (1981).

D.P.U. 95-118

Page 7

On April 29, 1993, Mass-Am entered into an Administrative Consent Order ("Consent Order") with the DEP (Exh. DPU-1). Under the Consent Order, the Company agreed to meet interim disinfection and reporting requirements and committed to a timetable to meet the DEP's filtration requirements (id.). Under the Consent Order, construction of the WTP was to commence by January 25, 1994, for completion by January 25, 1996 (id.). By amended Consent Orders dated June 3, 1993 and February 2, 1995, the facility was to be completed by June 29, 1996 (Exhs. DPU-1; DPU-4).

B. General Project Description

1. Water Treatment Plant

The WTP has been designed with a maximum capacity of 7.7 MGD, and it is located on a 46.34 acre site at 900 Main Street, Hingham, within a naturally-occurring depression (Exhs. DPU-56; DPU-115; MA-3, at 6; Tr. 1, at 77-78). [11] The WTP consists of a single building with a footprint of 240 feet by 140 feet, with a total interior area of about 75,000 square feet (Exhs. MA-4, at 3; DPU-56). The principal treatment process consists of oxidation, mixing and flocculation, clarification, filtration, and disinfection (Exhs. MA-4, at 3; Hingham-18). Facilities for residuals handling include filter backwash water clarification, recycling, sludge thickening, and centrifuge dewatering (Exh. MA-4, at 3). All water treatment and residuals handling process equipment and building systems (electrical, emergency power, HVAC, and dehumidification) are contained within the WTP (h). A 1.0 million gallon clearwater storage tank is adjacent to the WTP (id.)

[11] The capacity of the WTP is generally referenced as 7.0 MGD, representing the normal maximum output to the Company's distribution system (Exh. MA-3, at 6).

D.P.U. 95-118

Page 8

The WTP will treat all of the Company's sources of water supply, with the exception of Downing Street, which will be maintained as a reserve well with on-site treatment (Exh. MA-3, at 7; Tr. 1, at 3940, 139). [12] According to the Company, the WTP, in conjunction with the related system improvements described below, will increase Service Area A's reliable peak day capacity from 4.13 MGD to 8.35 MGD, thus eliminating the current deficit situation (Exh. MA-3, at 8; Tr. 1, at 7).

According to Mass-Am, considerable advantages exist in centralized treatment (Exh. MA-3, at 9). The additional treatment of its surface supplies would ensure that the finished water supply is free of pathogenic organisms (id.). The quality issues associated with both the Company's surface and ground supplies would be resolved by the WTP which would eliminate any threat to the water supplies associated with identified aesthetic and

bacteriological contaminants (Exh. MA-3, at 9; Tr. 1, at 13). The Company also noted that it would no longer produce a surface discharge from its filter backwashing process at Free Street No. 2 and that the centralized handling and storage of chemicals at a state-of-the-art facility would minimize risks to personnel, the public, and the environment (Exh. MA-3, at 9; Tr. 1, at 14). Mass-Am also stated that centralized treatment would facilitate more efficient control of its system operations, provide for more consistent water quality, and allow for cost-effective modifications to meet future regulatory requirements (Exh.-MA-4, at 10).

[12] The Company stated that because the construction of the WTP will promote efficiency, the Downing Street well, which is currently used primarily to meet summer peak demand, would have limited-use in the future and thus its connection into the WTP would not be cost-justified (Exh. MA-3, at 7; Tr. 1, at 14-15).

D.P.U. 95-118

Page 9

2. Off-Site Piping

In order to deliver its raw water supplies to the WTP, the Company engaged in an extensive off-site piping project ("off-site piping") conducted in two phases, with a total cost of \$3,358,000 (Exhs. MA-4, at 34; MA-7, at 33 (rev.)). Phase One, which connects Accord Pond, Fulling Mill, and Free Street to the WTP consists of the installation of 9,000 feet of 24-inch finished water mains, 1,700 feet of 20-inch finished water mains, and 1,700 feet of 12-inch raw water mains (Exh. MA-4, at 4). As part of this .)* act, an existing distribution main from Free Street was converted to a raw water transmission line, which required connecting into the newly-installed finished water mains a number of service lines that had formerly been connected to the converted main (Tr. 2, at 163-165).

Phase Two, designed to connect Scotland Street and Prospect Street to the WTP, consists of installing 2,600 feet of 12-inch raw water transmission mains from Scotland Street and 1,800 feet of 8-inch raw water transmission mains from Prospect Street, which will intersect with a 5,100-foot 20-inch raw water transmission main from Accord Pond for delivery to the WTP (Exh. MA-4, at 4). Treated water will be distributed through a 2,800-foot 12-inch distribution main (id.). Included in this project is the replacement of a section of 14-inch raw water main from Accord Pond (id.).

3. Accord Pond/Fulling Mill Modifications

The Company's supplies from Accord Pond are currently delivered to the Fulling Mill Pumping Station ("Fulling Mill pumping station") through a gravity-fed system (Exh. DPU-11, Sec. 3, at 3). Because of the location of the WTP, it will no longer be possible to rely on gravity flow to deliver supplies from Accord Pond to the Fulling Mill pumping station (id.). Therefore, a new pumping station will be installed at the Accord

D.P.U. 95-118

Page 10

Pond Pumping Station ("Accord pumping station") which will increase ~~the hydraulic capacity from Accord Pond to the WTP from 0.72 MGD to~~ 3.5 MGD (Exh. MA-3, at 8). The estimated cost of this project is \$380,000 (Exh. MA-7, at 33 (rev.)).

The Company's Fulling Mill pumping station is being renovated to allow the delivery of raw water to the WTP (Exh. MA-4, at 3). This project involves the demolition of existing process facilities and their replacement with raw water pumping equipment with a capacity of 3.0 MGD (Exhs. MA-3, at 8; MA-4, at 3). total estimated cost of this project is \$350,000 (Exh. MA-7, at 34 (rev.)).

In addition to the Accord and Fulling Mill pumping stations, Mass-Am is making some related modifications at Free Street, which will be completed by January 1997 (Exh. DPU-13, at A2). The Company did not include the cost of this particular project in its proposed rate base (Exh. MA-7, at 33 (rev.)).

4. Overall Project Cost

During evidentiary hearings, the Company stated that the current construction cost estimate for the project, including the WTP, Accord pumping station, Fulling Mill pumping stations and off-site piping, would be \$29,160,000 (Tr. 3, at 122-123). In addition, the Company estimated engineering costs to be \$4,154,000 for the WTP and \$193,000 for the Accord pumping station, Fulling Mill pumping station, and off-site piping projects (Exh. DPU-6). Construction supervision was estimated at \$1,531,000 for the WTP and at \$259,000 for Accord pumping station, Fulling Mill pumping station, and off-site piping projects (id.). An additional \$730,000 was budgeted for omissions and contingencies for the WTP, with another \$48,000 budgeted for the Accord pumping station, Fulling Mill pumping station, and off-site piping projects (id.). Allowance for funds used during construction

D.P.U. 95-118

Page 11

("AFUDC") was estimated at \$3,590,000 for the WTP, and at \$150,000 for the Accord pumping station, Fulling Mill pumping station, and off-site piping projects (id.)

The total cost attributed to the WTP was \$35,275,000 (Exh.

DPU-6; Tr. 3, at 120-121). The Company estimated that the Accord pumping station, Fulling Mill pumping station, and off-site piping work would be completed for \$4,255,000, for a total estimated project cost of \$39,530,000 (Exhs. DPU-6; DPU-57; Tr. 3, at 120). The actual cost of the project will be established at the time of supply, close-out, expected to occur later in 1996 (Tr. 3, at 66-67).

C. Project History

1. Free Street Site

In 1983, Mass-Am determined that a WTP was necessary to address problems with the quality of water which led to complaints from customers (Tr. 1, at 182). The Company's comprehensive planning study found that a WTP needed to be constructed in Hingham

(Exh. DPU-10; Tr. 1, at 183-184). In January 1983, the Company included in its capital forecasts \$6,275,000 for the project (Exh. DPU-6, January 7, 1983 Budget; Tr. 3, at 69-70). The Company stated that the forecasts were not intended for actual budgeting purposes but were created more for Company information purposes (Tr. 3, at 70).

The initial design of the WTP was based on the results of a series of pilot studies conducted in 1983 (Exhs. DPU-10; DPU-115, at 15). The pilot studies made recommendations on the treatment process, including oxidation, coagulation, flocculation, sedimentation, filtration, and clear-well facilities (Exh. DPU-10, at 61-62). Purification techniques were recommended, along with the use of backwash clarifiers and sludge drying lagoons for residuals handling (Exh. DPU-10, at 61-62, Ch. 2, at 1-3). Design work

D.P.U. 95-118

Page 12

commenced in 1986, and the DEP approved the Company's proposed treatment process in 1988 (Exhs. DPU-2, Summary Report at 4; DPU-115, at 16).

In siting the proposed facility, the Company focused its investigation efforts at its Free Street and Fulling Mill locations (Exh. DPU-2, Summary Report at 3). Based on the recommendation of the Company's engineering consultants, Metcalf & Eddy, Mass-Am selected the Free Street location, taking into consideration its proximity to the Company's supply sources, the presence treatment facilities at the site, and the expectation that the facility could be constructed with minor environmental variances (Exh. MA-13; Tr. 1, at 13, 176-177, 191). The original plans called for a multiple-structure "campus-style" complex with a treatment process involving oxidation and rapid mix tanks, flocculators, sedimentation basins with tube settlers, filters and chlorination/clearwell facilities (Exhs. DPU-33; DPU-55; Hingham-18). Although the 1983 pilot studies indicated the possibility of using sludge lagoons to handle residuals, Mass-Am selected belt presses for this particular process (Exh. DPU-55? Sheet No. M-14).

In 1984, Mass-Am included in its capital budget \$10.9 million for the proposed Free Street WTP and Fulling Mill pumping station modifications, thus incorporating some construction cost adjustments (Exh. DPU-6, November 19, 1984 Budget; Tr. 3, at 71-72). During 1987, Mass-Am engaged in an extensive review process with DEP on the technical aspects of the WTP design (Tr. 3, at 73). In October 1987, the Company did not include the construction costs in the budget and chose to budget only \$1,187,200 for design and

permitting costs (Exh. DPU-6, October 30, 1987 Budget; Tr. 3, at 72).

During this period, the Company continued to develop construction estimates for the project (Exh. DPU-25) In 1987, the Company's estimates indicated that total construction

D.P.U. 95-118

Page 13

costs for the entire project, consisting of the WTP, modifications to Accord Pond and Fulling Mill, and off-site piping, would be \$14,324,572 (Exhs. DPU-25; DPU-57). The Company stated that this estimate was based on engineering estimates of unit costs and was not intended to be a comprehensive analysis; bids were not used to generate these estimates because of the incomplete permitting process (Exh. DPU-25; Tr. 2, at 34). Mass-Am estimated total construction costs of \$12,965,000 for the WTP, \$250,000 for Accord Pond, \$165,000 for Fulling Mill, and \$920,000 for off-site piping (Exh. DPU-57). With the addition of \$1,572,000 in engineering costs and \$1,700,000 in interest on construction, the Company estimated a total project cost of \$17,572,000 based on 1987 data (Exh. DPU-57; Tr. 2, at 32).

To provide maximum opportunity for local input, Mass-Am stated that it sought approvals of any necessary zoning exemptions through local zoning and planning boards rather than through the Department (Exh. MA-5, at 9). Because the Free Street site was, in part, located on wetlands, the Company applied to the Conservation Commission in May 1989 for an order of conditions to construct the facility within a floodplain (Exh. DPU-199; Tr. 1, at 122). In June 1989, the Conservation Commission determined that the project failed to meet the Wetlands Protection Act's requirement that compensatory storage requirements be met in floodplains and thus rejected Mass-Am's petition (Exhs. Hingham-2, at 3-4; MA-16; Tr. 1, at 123-124). [13] In a separate decision, the Conservation Commission rejected in June 1989 Mass-Am's petition for waivers from local by-laws and regulations

[13] Under 310 C.M.R. s. 10.57(4)(a) of the Wetland Protection Act Regulations, an applicant seeking to construct in a floodplain must excavate a non-floodplain area so that it compensates for flood storage capacity lost as a result of the project (Exh. Hingham-24, at 26; Tr. 9, at 199-200).

D.P.U. 95-118

Page 14

(Exh. Hingham-2, at 4; Tr. 9, at 202). [14] Mass-Am incurred \$820,000 in engineering design costs and \$615,000 in permit acquisition costs, for a total of \$1,415,000 in Free Street-related costs (Exh. DPU-6; DPU-57; Tr. 3, at 124-125).

During the Conservation Commission's review of the Free Street site, the Company developed a list of 13 criteria on which to evaluate alternative sites, including access, ownership, lot size, engineering and wetlands (Exh. DPU-59, at 7-10; Tr. 1, at 178-179). Mass. identified 12 potential sites for the WTP, which were narrowed down to four, including Free Street and a 46.34-acre undeveloped parcel owned by the Company at Main Street (Exh. DPU-59, at 7-10; Tr. 1, at 179).

2. Main Street 1

After the Conservation Commission denied Mass-Am's requests for waivers, the Company resumed its site search process in early 1990 (Exh. DPU-2, Summary Report at 4). Later that year, the

Company determined that while the Main Street site would require an additional \$1.0 to \$1.5 million in pipeline work, these costs were offset by the difficult site conditions at Free Street, the need for an environmental impact study for a septic system at the Free Street site, and the Consent Order with DEP (Tr. 1, at 33, 178-479). Mass-Am concluded that in view of these considerations, it would be appropriate to relocate the WTP to an abandoned cornfield at the southeast corner of the Main Street site ("Main Street 1") (Exh. Hull-1; Tr. 1, at 33, 131, 179-180, 189-190; Tr. 11, at 14-16).

The original design of Main Street 1 was based on the design that had been prepared for the Free Street site (Tr. 1, at 131, 189-190). Two earthen berms -- one about 300 feet

[14] The Company did not appeal either order issued by the Conservation Commission (Exh. Hingham-2, at 6).

D.P.U. 95-118

Page 15

long and ten feet high, and the other about 160 feet long and six feet high -- were proposed for the east and south sides of the WTP, respectively, in order to mitigate noise and visual effects (Exh. DPU-1, Summary Report at 7; Tr. 11, at 43-44). Mass-Am proposed two alternative access routes to the Main Street 1 site, with a construction and emergency access road off of Hope Road (Exh. DPU-1, Summary Report at 9).

Mass-Am petitioned the Hingham ZBA in July 1990 for four special permits which were necessary for the Main Street 1 location (Exh. DPU-2, Special Permit Application Forms). The Hingham ZBA held a total of nine hearings on the Company's petition between September 27, 1990 and July 11, 1991 (Exh. DPU-1, Hingham ZBA Order at 2). Public comment at the hearings focused on the propriety of the site for a facility of this nature and the risk of liquid chlorine in a residential neighborhood (Tr. 11, at 61-62). In addition, the Planning Board recommended denial of Mass-Am's petition in November 1990 due to the use and transportation of chlorine gas in a residential neighborhood, the use of Hope Road as an access route, traffic concerns, and the adverse impact of the facility on property values (Exhs. DPU-1, Information Supp. No. 4, at 3; Hingham-1, at 34). In the wake of public opposition to the siting and other features of the WTP, the Company requested a continuation of the hearings to consider and address the concerns raised at the public hearings and by the Hingham ZBA (Exh. Hingham-1, exh. MJS-2).

3. Main Street 2

Based on its evaluation of the concerns expressed during the hearings relative to the Main Street 1 site, Mass-Am filed three amended applications and one new application with the Hingham ZBA in May 1991, which incorporated significant project revisions (Exhs. DPU-1, Hingham ZBA Order at 2; DPU-21, Peabody & Brown letter dated May 13,

D.P.U. 95-118

Page 16

1991). Under the revised applications, the site location remained at the Main Se et parcel, but the footprint of the WTP was condensed and combined into a single structure, the location was shifted to a natural depression north of the open field, [15] and the treatment process was changed to superpulsator clarifiers instead of the proposed flocculators and sedimentation basins ("Main Street 2") (Exhs. DPU-56; Hingham-18). Additionally, the purification process was changed from chlorine gas to sodium hypochlorite liquid (Exh. DPU-2, Information Supp. No. 4, at 4-5). As part of the amended petitions, the primary access drive was relocated off of Main Street to an existing curb cut at a neighboring church, and the emergency access drive to Hope Road was eliminated (id., Information Supp. No. 4, at 1-2).

For residuals handling, the Company elected to use mechanical dewatering with centrifuges (Tr. 1, at 51). According to Mass-Am, sludge lagoons had been eliminated as an alternative residuals handling technique, because they would have required several acres of open land, thus running contrary to the need to minimize the facility's footprint and to eliminate open tankage (A at 45). Additionally, there was no sewage system in the area to discharge solids for treatment (id.). According to the Company, residual solids must consist of a 20 percent cake (id. at 46). Because the residual solids from the facility would be over 50 percent alum, a chemical which tends to hold water, the Company concluded that it was questionable whether sludge lagoons could properly treat the residual solids generated at the WTP (id. at 4647).

[15] This site had been suggested to the Company during the Hingham ZBA hearings as an alternative location to the Main Street 1 site (Exh. MA-17).

D.P.U. 95-118

Page 17

By order dated October 17, 1991, the Hingham ZBA approved the amended applications, subject to specific conditions (Exh. DPU-1, Hingham ZBA Order of October 17, 1991).

The Company performed additional pilot tests during the winter of 1991 and spring/summer of 1992 to evaluate the performance of the superpulsator clarifier unit and granular activated carbon ("GAC") filters (Exhs. DPU-10; DPU-115, at 16; Tr 1, at 15-19). The pilot tests also assisted in developing other plant processes, including residual solids handling (Exh. MA-3, at 10). As a result of the pilot tests, the Company selected GAC filtration processes and mechanical centrifuges for the treatment of residual solids (Exhs. DPU-10, at 5-1; MA-3, at 10). The Company submitted to DEP the results of the pilot tests, which were ultimately approved (Tr. 1, at 19).

In November 1992, the Company estimated costs of \$20.0 million to site the WTP at the Main Street 2 location (Exh. DPU-6, November 19, 1992 Budget). This budget incorporated a construction cost

estimate of \$14,222,078, engineering and legal services of \$5,227,500, and interest of \$550,422 (Exh. DPU-6, November 19, 1992 Budget; Tr. 3, at 73). At that time, the Main Street 2 design had

been completed but not priced with the contractor (Tr. 3, at 73).

In October 1993, the Company hired Pacific Environmental Services to conduct a formal value engineering study[16] to evaluate the plant design and processes with a view towards identifying alternative designs and to reduce the total cost of the project while still complying with zoning requirements (Exh. DPU-8, at 1; Tr. 2, at 43-47, 63-64). The value

[16] A formal value engineering study follows a prescribed format, involving cost modeling, function analysis, and brainstorming techniques (Tr. 2, at 67-69).

D.P.U. 95-118

Page 18

engineering study, performed at a total cost of approximately \$270,000, identified a total of approximately \$6,187,900 in potential capital savings and \$88,920 in operation and maintenance expense savings (Exhs. DPU-8, Table 1 at 5; DPU-42; DPU-57). Of this amount, the study estimated that approximately \$3.0 million in capital savings could be implemented without the need for significant redesign and repermitting (Exh. DPU-8, at 1). Prior to the actual contracting process, the Company had accepted four proposed modifications with an estimated capital savings of \$1,425,000 (Exh. DPU-45). During the construction phase, the Company accepted an additional \$2,239,796 in value engineering modifications (id.)

Initially, the Company commenced a bidding process for the WTP. The Company terminated this process and awarded the contract for the WTP, Accord Pond, and Fulling Mill to Bec-Mor Joint Venture, Inc. ("Bec-Mor"), a joint venture of Bechtel Construction Company ("Bechtel") and Morganti, Inc. ("Morganti") (Exh. MA-4, at 5). Mass-Am stated that it did not continue with the bidding process due to Bechtel's extensive knowledge of the project and an evaluation that Bec-Mor's proposal was competitive with the industry (Tr. 3, at 92-93). Both Bechtel and Morganti have had extensive experience in the construction of water treatment plants (Tr. 13, at 74-75). Bec-Mor's role in the project was a combination of general contracting and construction management at risk (Tr. 2, at 77-78). [17] Mass-Am awarded separate contracts for the WTP and off-site piping portions of the project (Exh. MA-4, at 5). The capital budget estimate for the overall project, which incorporated the contract price negotiated with Bec Mor, was \$38.87 million (Exh. DPU-6, April 21,

[17] Construction management at risk refers to the management of multiple contracts held and managed on behalf of the project owner under the name of the construction manager (Tr. 2, at 77).

D.P.U. 95-118

Page 19

1994 Budget, November 22, 1993 Budget) [18]

The Company executed a contract with Bec-Mor on August 1, 1994 (Exh. DPU-13). Under the contract, Mass-Am initially agreed to pay Bec-Mor a guaranteed maximum price ("GMP") of \$29,269,721, subject

to modification under specific conditions based on construction commencement delays, changes in the scope of work required by the Company, or force majeure (Exh. DPU-13, at A3-A4, GC-19; Tr. 3, at 102-103). [19] Bec-Mor's general conditions and supervision fee of \$2,512,407, representing Bec-Mor's own direct construction-related costs for its on-site personnel which are reimbursable at cost, is included in the GMP (Exh. DPU-13, exh. 1; Tr. 3, at 29-30). The GMP does not include the Bec-Mor contractor fee of \$2,239,492 which is intended to cover Bec-Mor's profit and related costs, and is subject to adjustment for construction cost increases or decreases outside of a specified bandwidth related to total construction costs (Exh. DPU-13, at A4).

The contract permits both Mass-Am and Bec-Mor to make value engineering change proposals for the purpose of reducing the total cost of the project (Exh. DPU-13, at A4-A5). The contract also contains an incentive provision whereby Bec-Mor will be allowed to retain the GMP and 20 percent of the difference between the final project cost underrun, if one exists, and the GMP, with the remaining 80 percent going towards further reducing the total cost of the project (Exh. DPU-13, at A6; Tr. 3, at 112-113). Based on the scope of work changes made to date, the current GMP is \$29,044,480 and is estimated to decrease by

[18] The Company's capital budget was revised to \$39,530,000 in October of 1994 to reflect updated costs (Exh. DPU-6, October 20, 1994 Budget).

[19] Included in the GMP is a contingency reserve fund of \$1,276,067, intended to meet unexpected requirements and to cover changes necessary to meet the intent of the original contract (Exh. DPU-13, at A6). Contingency reserves are not used to cover the cost of change orders to the scope of the project (Tr. 3, at 89, 104).

D.P.U. 95-118

Page 20

another \$100,000 (Exh. DPU- ;9; Tr. 13, at 103).

Acting as construction manager, Bec-Mor entered into 33 separate subcontracts to cover the construction work and furnishing of materials and equipment (Exhs. DPU-14; MA-4, at 5). Mass-Am stated that the project was subdivided into a considerable number of small and specialized packages in order to take advantage of subcontractors and suppliers specializing in the various processes, thereby resulting in cost savings (Exh. MA-4, at 5). [20]

Construction commenced at the Main Street site in September 1994 (Exh. DPU-7> Weekly Report Ending September 17, 1994). Under the terms of the Bec-Mor contract, the WTP and Accord pumping station are required to be substantially completed by June 29, 1996

(Exh. DPU-13, at A1). Modifications to the Fulling Mill pumping station must be substantially completed by October 1996 (id. at A2). During the hearings in this proceeding, Mass-Am projected that the WTP would be operational by April 30, 1996 W.

Upon the DEP's certification of the WTP as a useful water treatment facility, the WTP was placed into service on April 22, 1996 (RR-DPU-25 (supp.)). Mass-Am reported that the required certification by Malcolm Pirnie, that the WTP had been substantially completed as defined by the terms of the lease and that water was being treated under the parameters prescribed by the

construction contract, was expected to be issued by June 15, 1996 (id.). The Hingham Building Commissioner has made an initial declaration that the WTP is suitable for occupancy, and will issue a final certificate of occupancy upon determining that the WTP is in full compliance with the conditions of the special permits issued by the Hingham ZBA (RR-DPU-25; RR-DPU-25 (supp.)).

[20] During the course of construction, a number of cost savings proposals were presented by contractors and were accepted (Exh. MA-4, at 5).

D.P.U. 95-118

Page 21

4. Accord Pond/Fulling Mill Modifications

The Company has completed work at the Accord pumping station, and it began pumping raw water to the WTP on April 22, 1996 (Tr. 3, at 67; RR-DPU-26). In order to put the Accord pumping station to full use, Mass-Am explained that a deteriorated 400-foot section of water main, of which 300 feet traverses wetlands, must be repaired (Tr. 3, at 67; Tr. 6, at 71, 87-89). A request is pending before the Conservation Commission for the necessary permit (Tr. 3, at 67-68; Tr. 6, at 71, 80-81). Pending the concept of an approval and the completion of the actual repair work, the Company stated that it could still use the Accord pumping station (Tr. 6, at 86-87).

Because it was necessary to maintain the Fulling Mill pumping station in order to provide service until the WTP was completed and approved, construction work for this phase was limited to installing pipelines that will permit the Fulling Mill pumping station to be taken out of service for renovations (RR-DPU-27). Demolition work and new installations are expected to commence shortly, and the Company has estimated a completion date of August 1996 (Tr. 3, at 67; RR-DPU-27).

5. Off-Site Piping

On September 4, 1994, Mass-Am executed a contract with R.H. White Construction ("R.H. White") for the off-site piping work (Exhs. MA-4, at 5; DPU-37). The R.H. White contract initially provided for a GMP of \$1,387,382, subject to changes in the scope of work, and permitted both Mass-Am and R. H. White to propose value engineering change proposals for the purpose of reducing the total cost of the project (Exh. DPU-37, at A2-A3, GC-19). The GMP does not include engineering and related costs (Tr. 3, at 83-84).

The contract also contains an incentive provision whereby R.H. White will be allowed to

D.P.U. 95-118

Page 22

retain 20 percent of the difference between a final project cost underrun, if one exists, and the GMP, with the remaining 80 percent going towards further reducing the total cost of the project (Exh. DPU-37, at A3-A4). Phase One construction was completed as of December 31, 1995 (Tr. 3, at 20; RR-DPU-28).

The scope of work for Phase Two was amended to provide for the replacement of 2,300 feet of deteriorated main running along Main Street from Accord Pond, at a cost of approximately \$180,000 (Tr. 3, at 84-85). Thus, the estimated construction costs of Phase Two,

excluding engineering and related costs, is \$760,000 (id. at 19-20, 84-85). A number of raw and finished mains associated with Phase Two were placed in service as of December 31, 1995 (RR-DPU-28). The Company stated that the raw water mains from Scotland Street and Prospect Street have been installed and will be placed in service by May 31, 1996 (s; RR-DPU-28 (supp.)). During the hearings, Mass-Am estimated that the final project costs were expected to finish at budget (Tr. 3, at 20).

D. Intervenors' Analysis

1. Hingham

a. Free Street Permit Process

Hingham stated that although Mass-AM had been able to meet the wetlands compensation requirements in its petition to the Conservation Commission, it failed to meet floodplain compensation requirements (Tr. 9, at 201-202). According to Hingham, it is highly unlikely that an applicant could obtain a waiver from floodplain requirements (id. at 203, 208-209). Hingham asserted that, in view of the propensity for flooding at the Free Street location, siting the WTP at Free Street would have been difficult, if not impossible under the Wetlands Protection Act (Exh. Hingham-1, at 5). Hingham concluded that the

D.P.U. 95-118

Page 23

Company failed to consider the floodplain compensatory requirements necessary to site the WTP at Free Street (Tr. 9, at 197-198).

b. Main Street Permit Process

Hingham stated that while the Hingham ZBA may on occasion suggest that an applicant consider a particular design aspect or process, the Hingham ZBA does not direct applicants to make changes or take any specific action (Tr. 9, at 155-156; Tr. 13, at 12). Hingham contends that the design modifications made by Mass-Am, as summarized in a memorandum dated November 26, 1990, which described a conversation between Dr. Reimold and Ms. Horn, were initiated by the Company (Exh. DPU-21; Tr. 13, at 8).

Further, Hingham argued that the Company did not meet with neighborhood residents to discuss the application prior to filing

and never indicated to Hingham ratepayers the cost of the design changes relative to the permitting process (Exh. Hingham-1, at 4, 6; Tr. 9, at 178, Tr. 13, at 8). Hingham explained the role which the HWSC plays in monitoring the adequacy and quality of Hingham's water supply, including HWSC's working relationship with Mass-Am (Exh. Hingham-4, at 1-2). Hingham maintained that had the HWSC been made aware of the magnitude of the increased project costs prior to the Hingham ZBA's decision, the HWSC would have examined lower cost alternatives (id. at 3).

c. Construction of WTP

Regarding construction costs, residuals handling process, and construction management services for the WTP, Hingham stated that construction costs for the WTP exceeded the upper range of construction costs that would be expected for a treatment plant of 7.0 MGD (Exh. Hingham-5, at 4). Hingham stated that a 7.7 MG12 plant comparable to the WTP would cost between \$10.8 million and \$25.2 million (Exh. Hingham-17; Tr. 13,

D.P.U. 95-118

Page 24

at 84-85).

In support of this contention, Hingham cited three sources: (1) a publication entitled "Construction Cost Data for New Surface Water Treatment Plants," issued by the American Water Works Association ("AWWA Study"); [21] (2) "Summary of Drinking Water Treatment Facilities," released by DEP in 1994; [22] and (3) nine water treatment plant projects designed and constructed since the mid-1980s by Weston & Sampson (Exhs. Hingham-5, at 6; Hingham-15; Hingham-16). Hirt stated that data from the AWWA Study were used as a primary source, with the other two sources used to check the results of the AWWA Study (Tr. 13, at 162-163).

Using the AWWA Study, Hingham stated that it first made the data consistent by trending the costs provided in the Engineering News Record Index, a monthly reference work generally used in the construction industry (Exhs. Hingham-5, at 6; Hingham-9; Tr. 13, at 73-74). Hingham then added \$2.5 million to account for the WTP's mechanical dewatering process and 17.5 percent for engineering costs (Exh. Hingham-17; Tr. 13, at 75-76). Hingham concluded that based on the AWWA Study, a 7.7 MGD plant comparable to the Company's RTP would cost between \$7.8 million and \$25.5 million (Exh. Hingham-17; Tr. 13, at 75-76).

[21] The AWWA Study is a compilation of 38 surface water treatment plants constructed in the United States since 1980 (Exhs. Hingham-5, at 6; MA-201). According to the AWWA Study, construction cost estimates for water treatment plants can be estimated with the following equation:

Cost (\$ million) = 1.51 x capacity (MGD)^{0.859}
(Exh. MA-201, at 3; Tr. 13, at 71-76).

[22] This is a compilation of 75 water treatment plants that have been constructed in Massachusetts since 1980 (Exh.

Hingham-15).

D.P.U. 95-118

Page 25

Using the DEP's summary, Hingham stated that it examined 19 treatment plants with design flows it considered comparable to Mass-Am's WTP (Tr. 13, at 81). Hingham then added \$2.5 million to account for mechanical dewatering equipment at the low and middle estimates (id.). Claiming the presence of additional equipment at some plants which increased average costs, Hingham did not add a mechanical dewatering component to the high end of the range (id.). Based on this analysis, Hingham concluded that a 7.7 MGD plant comparable to the Company's WTP would cost between \$10.6 million and \$29.7 million (Exhs. Hingham-15; Hingham-17; Tr. 13, at 77-79, 81, 219).

Hingham stated that by examining the Weston & Sampson projects, trending them to reflect 1994 cost, and adding \$2.5 million for mechanical dewatering, a 7.7 MGD water treatment plant would cost between \$14.0 million and \$20.3 million (Exhs. Hingham-16; Hingham-17; Tr. 13, at 83-84).

Hingham concluded that by averaging the cost methods together, a 7.7 MGD water treatment plant would cost Mass-Am between \$10.8 million and \$25.2 million (Exh. Hingham-17; Tr. 13, at 84-85). Hingham stated that the Company's higher cost of the WTP is due in part to Mass-Am's lack of use of competitive bidding processes.

Hingham asserted that the negotiating process demonstrates that the Bec-Mor contract was actually a no-bid arrangement (Tr. 13, at 115-116). Hingham stated there were a number of significant WTP specifications which lacked an "or-equal" clause and that by only conducting pilot tests of a superpulsator from a single vendor, Mass-Am precluded the opportunity to evaluate other processes that may have spurred vendor competition (id. at 117, 118, 145).

Hingham stated that the processes used at the WTP have increased overall costs significantly (Exh. Hingham-5, at 8). Hingham stated that the Company's selection of

D.P.U. 95-118

Page 26

centrifuges to handle residuals is not typical in New England (id.). Further, Hingham also stated that centrifuges exhibit higher capital costs, require more power to operate, and have a high labor requirement (id.). Hingham noted that by using residual lagoons which could have readily been installed at the WTP, the Company could have achieved a more cost-effective solution (id. at 8-9). Hingham contended that, contrary to the Company's assertions that the use of alum in the treatment process made lagoons infeasible, other water treatment facilities using lagoons with water supplies comparable to that of Mass-Am use aluminum in their treatment processes (Exh. Hingham-12; Tr. 13, at 99-100).

With respect to construction management costs, Hingham noted that conventional engineering and construction services are the general method used, with construction management generally used in large-scale projects involving multiple locations which have to be coordinated simultaneously (Tr. 13, at 220-221). According to

Hingham, a typical construction service provider would include construction administration and resident engineering services, and would charge between 15 to 20 percent of total construction costs for their services, as compared to the approximate 22.5 percent paid by Mass-Am (Exhs. Hingham-10; Hingham-5, at 8; Hingham-11). Hingham stated that the Company's engineering costs of over \$5 million, applied to Hingham's average cost estimate of \$10.8 to \$25.2 million, would represent about 27 percent of total construction costs (Tr. 13; at 87). Hingham maintained that by using the construction management approach instead of the general contractor arrangement, an additional \$2.2 million was added to project costs unnecessarily (id. at 121-122).

Hingham stated that taking into account the construction and engineering costs and the bid processes, the total project cost should have been approximately \$29.6 million or

D.P.U. 95-118

Page 27

approximately \$10 million less than the actual project cost estimate (id. at 121-123).

2. Hull

Hull stated that the Company failed to make a substantive comparison of the merits of alternatives to centralized water treatment, including the construction of several smaller treatment plants or the purchase of water (Exh. Hull-3, at 7; Tr. 12, at 111-117). Hull also stated that Mass-Am failed to apply a more comprehensive approach to its quality and supply needs, which would have resulted in a significantly less costly source of supply for Service Area A (id. at 6). Hull contended that the increase in

rates to customers in Service Area A is likely to affect usage patterns in a substantial way through conservation, the use of individual wells, and operational curtailment by commercial and industrial customers (Exh. MA-184). Hull contended that Mass-Am failed to properly consider the full spectrum of alternatives available to meeting supply and quality requirements and should have considered a least-cost integrated resource planning ("IRP") process (Exh. Hull-3, at 10, 12).

Hull stated that based on its analysis, the total cost of the WTP is as much as 25 to 50 percent greater than that of comparable plants (Exhs. Hull-3, at 8; MA-187). Hull stated that some of the higher costs are due to poor planning, wasted design and site development costs, and "extraordinary requirements" imposed by Hingham officials in the permitting process (Exh. Hull-3, at 8-10). Hull stated that the Company's own feasibility engineer said that the footprint requirements, the need to enclose all facility elements, the use of mechanical sludge dewatering, and the need to resite the WTP, contributed to the increase in costs (id. at 8-9). Hull also stated that Company officials referenced the extensive design modifications made during the permitting process as increasing the total cost of the WTP (id. at 9). Hull asserted that it estimated that about one-third of total construction costs, or \$10

D.P.U. 95-118

Page 28

million, represented additional capital costs, with a corresponding increase to the Company's operating expenses of several hundred thousand dollars (id. at 10).

E. Positions of the Parties

1. Hingham and Hull

a. Standard of Review

Hingham and Hull assert the need for close Department evaluations of all AWW entities, including AWW, AWW Service, Mass-Am, and Massachusetts Capital Resources ("MassCap") (Joint Intervenor Reply Brief at 38). Hingham and Hull state that throughout the course of this project, the Company, MassCap, AWW Service, and AWW have acted as a common unit (Joint Intervenor Brief at 35). Hingham and Hull note that the Department has previously found that transactions between affiliates, including those transactions involving the use of subsidiary structures and project financing, warrant close examination (id. at 34-36).

Hingham and Hull suggest that the Department's prudent, used and useful standard applied to rate base additions could be applied here, as well as the Department's standards of review for utility financing proposals (id. at 30-34). Hingham and Hull contend that the essence of review would be whether the Company was reasonable in its decision-making processes and if the total project cost was reasonable in light of benefits to customers (Joint Intervenor Brief at 30, 34; Joint Intervenor Reply Brief at 3-4).

b. Water Treatment Plant

Hingham and Hull contend that the WTP was not on-line at the end of the test year, and will not be on-line by the date of this Order (Joint Intervenor Brief at 36). They assert that Department precedent requires a plant to be in service by the filing date of a rate case in

D.P.U. 95-118

Page 29

order to qualify as a post-test year rate base addition, and that it would be inappropriate to charge rates for an unfinished plant (id. at 37). Hingham and Hull further state that, because the percentage rent component fluctuates with throughput, the rent expense level is not known and measurable at this time (Joint Intervenor Reply Brief at 7). They state that, if the Company's anticipated July 1996 on-line date actually comes to pass, Mass-Am would be free to seek rate recovery at that time (Joint Intervenor Brief at 38).

Hingham and Hull argue that the Company acted imprudently and unreasonably from the outset of this project, and thus any costs associated with such imprudence should be excluded from rate recovery (Joint Intervenor Brief at 38-39; Joint Intervenor Reply Brief at 29-30). They maintain that, although Mass-Am realized the need for a WTP since the early 1980s, had ready access to the technical and managerial expertise of AWW, and was aware of the Department's expressed concerns over quality of service, the Company delayed the project which resulted in imprudent siting and design of the WTP (Joint Intervenor Reply Brief at 29-31).

Hingham and Hull contend that the Company failed to take prudent and reasonable steps to site the facility at Free Street

(Joint Intervenor Brief at 39). Hingham and Hull stated that the Company invested \$1.4 million in engineering design without engaging in any form of site evaluation prior to preparing a full design (id. at 39-40). Hingham and Hull maintain that Mass-Am chose instead to invest \$1.4 million in engineering design without even presenting a preliminary site footprint to the Conservation Commission (id.) In view of the history of flooding and water-related problems at Free Street, Hingham and Hull contend that the Company's failure to make inquiries with local officials before embarking on the project "fl[ies] in the face of prudence and reasonableness" (Joint Intervenor Brief at 40-41, citing

D.P.U. 95-118

Page 30

D.P.U. 93-60, at 28-29; Joint Intervenor Reply Brief at 32-33).

Hingham and Hull contend that Mass-Am repeated mistakes made at Free Street by attempting to site the Free Street-based WTP design at Main Street 1 (id. at 42). According to Hingham and Hull, the Company's selection of the open field adjacent to a residential neighborhood was the worst location for the WTP (Joint Intervenor Brief at 43; Joint Intervenor Reply Brief at 30, 33).

Hingham and Hull argue that the Company acted recklessly by not notifying the public of the cost implications of design changes (Joint Intervenor Brief at 44). Hingham and Hull also argue, citing the lack of written documentation as well as the testimony of witnesses involved in the process, that the record belies the Company's argument that local boards were advised of cost impacts (Joint Intervenor Brief at 55-56; Joint Intervenor Reply Brief at 31). Further, Hingham and Hull argue that the record is replete with evidence of the Company's inability to determine which additional costs were associated with each design change and its failure to conduct a cost analysis prior to making the changes (Joint Intervenor Brief at 54).

Hingham and Hull contend that the design of a larger, more expensive facility to house a more costly residuals processing system, the abandonment of \$1.4 million in Free Street design

plans, and Mass-Am's decision not to use lagoons for residuals handling were imprudent (id. at 47-48, 57). Hingham and Hull contend that had the Company acted prudently from the start, the move from Free Street to Main Street could have incorporated less-costly lagoons (id. at 49-51).

Furthermore, Hingham and Hull argue that the Company's management decisions resulted in excess capacity of the WTP and thus unreasonable construction costs (id.

D.P.U. 95-118

Page 31

at 52-53). Hingham and Hull note that the WTP is designed to meet maximum demands only anticipated to occur only once in twenty years (id. at 58-8, citing Tr. 1, at 146-147; Joint Intervenor Reply Brief at 39). Hingham and Hull maintain that by using the Downing Street well to meet peak demand, and by instituting both conservation measures and IRP, the Company could have avoided the excess capacity (Joint Intervenor Reply Brief at 39).

Hingham and Hull fault Mass-Am for not using competitive bidding for Bec-Mor's services, and using construction management instead of a general contractor (Joint Intervenor Brief at 52-53). Hingham and Hull note that there is no record that the Company accepted bids from any party outside of Bec-Mor for comparison purposes, and that Bec-Mor's quoted price of \$28 million was based solely on a comparison with the engineer's estimate for that cost component (id. at 60-61, citing Tr. 13, at 116, 122). They further assert that the Company used the most expensive technology for the WTP, and evaluated a limited range of options in the design process (Joint Intervenor Brief at 59-60). Hingham and Hull conclude that the Company's overall handling of the project led to cost overruns of at least \$10 million and recommend that the Department identify and eliminate those cost overruns as well as any others identified (id. at 62-63).

Finally, Hingham and Hull note that although the \$36,714,000 estimated cost of the WTP used to develop the annual lease expense has been reduced by approximately \$2.2 million, the Company has not revised the surcharge to take this into account (id. at 64-65, citing Tr. 3, at 111). They advocate that, to the extent the surcharge still incorporates overstated construction costs, the Department should disallow the unnecessary lease expense (id. at 65). Hingham and Hull propose that the Company be required to credit all of the excess proceeds over actual construction costs against MassCap's common equity balance,

D.P.U. 95-118

Page 32

versus reducing total debt and equity on a pro rata basis (Joint Intervenor Reply Brief at 15-16).

c. Accord Pond/Fulling Mill/Off-Site Piping

Hingham and Hull contend that the Company's proposed inclusion in rate base of the modifications being made at the Accord and Fulling Mill pumping stations, along with off-site piping, is inconsistent with Department ratemaking practices (id. at 11). They argue that neither the Accord pumping station nor the Fulling Mill pumping station modifications have been completed, nor have the actual costs of either project component been quantified (id. at 12-14). With respect to the off-site piping project, Hingham and

Hull argue that the Company has provided no evidence to explain the increase in costs from the GMP contract with R.H. White or the extent to which the project is currently used and useful to ratepayers (id. at 11-12).

2. Oxford

Oxford contends that although the overall WTP project is intended to serve only Service Area A and thus is unrelated to the provision of water service in Service Area B, Mass-Am is seeking to recover from all of its customers the costs associated with the Accord pumping station and Fulling Mill pumping station, as well as off-site piping from both service areas (Oxford Brief at 34). Oxford maintains that the bulk of capital improvements and system maintenance over the past five years has been for the benefit of

Service Area A (id. at 4-5).

To remedy this disparity in service, Oxford proposes that the annual depreciation expense associated with the Accord pumping station, Fulling Mill pumping station, and off-site piping, be added to the surcharge proposed for Service Area A (id. at 5). In the

D.P.U. 95-118

Page 33

alternative, Oxford states that the cost of these improvements should be reflected in separate tariffs for both service areas (id.). Oxford states that this would result in a shift of approximately \$500,000, or 2.3 percent, in total revenue requirements to Service Area A from Service Area B (Oxford Brief at 5-6, citing RR-Oxford-2).

3. Cohasset

a. Standard of Review

Cohasset states that the standard of review for the WTP should be that of fairness and based on each rate class' responsibility for a particular expense (Cohasset Brief at 2). Cohasset notes that the Department's policy on affiliated transactions is relevant, as well as the policy of denying cost recovery of expenses incurred as a result of imprudence, incompetence, or poor decision making (id. at 2-3).

b. Water Treatment Plant

Cohasset states that the Company's own feasibility engineers admit that the total cost of the project is higher than would be normally expected (id. at 3-4). Arguing that neither the Company nor AWW performed any cost analysis of the relocation from Free Street to Main Street or any evaluation of the cost impact of the design changes putatively imposed by Hingham, Cohasset contends that the direct responsibility for these cost overruns falls upon the Company, (id. at 4-5). Cohasset further states that the Company did not notify the various towns of the cost impacts associated with the design changes (id. at 5). Cohasset proposes that the Department use the analysis presented by Hingham to disallow construction costs (id. at 4, n.2).

D.P.U. 95-118

Page 34

4. Company

a. Standard of Review

Mass-Am offers two possible standards of review for the WTP. Mass-Am states that the first standard is premised on the

Department's treatment of post-test year additions to rate base, while the second standard links rate recovery of the lease costs to the Department's known and measurable standard for annually recurring expenses (Company Brief at 22-23).

Under the post-test year plant addition standard, Mass-Am cites the Department's standards for determining the prudence of rate base additions (*id.* at 23, citing Western Massachusetts Electric Company, D.P.U. 85-270, at 25-27 (1986)). Reasoning that the WTP was originally intended to be a rate base item and that the facility lease payments should be considered a surrogate for rate

base treatment, the Company contends that the facility lease payments[23] constitute a significant post-test year plant addition (Company Brief at 24-26). In the alternative, the Company contends that ample precedent exists for the Department to conclude that the facility lease payments represent an annually recurring known and measurable change to test year cost of service and meet the Department's standards for rate treatment (*id.* at 26-27).

b. Water Treatment Plant

With respect to the need for the WTP, the Company argues that the WTP has been constructed to address present and reasonably anticipated future federal and state drinking water standards, as well as long-standing aesthetic quality problems (*id.* at 5-8, 24-25). Additionally, Mass-Am asserts that the WTP will improve the Company's ability to use its

[23] For a detailed discussion of the lease arrangement between Mass-Am and MassCap, see Section III.A, below.

D.P.U. 95-118

Page 35

existing sources fully, thus enhancing system storage capacity and improving system pressure (*id.* at 5, 8-9). The Company contends that its decision to treat all of its supplies excluding Downing Street and to design the WTP with a capacity of 7.7 MGD was appropriate and that the intervenors' arguments regarding excess capacity indicate a lack of understanding of capacity and sizing issues for water facilities (Company Reply Brief at 32-33). Mass-Am questions the foundation for the proposals of Hull's expert witness concerning preapproval and IRP and challenges his expertise within the water industry (Company Brief at 42-43). The Company contends that Hull's witness conducted no price elasticity studies to support his assumptions, was unable to cite cases where water reductions in the 20 to 30 percent range had occurred, and did not take into consideration what Mass-Am claimed to be the lack of significant price elasticity in residential water use (Company Brief at 42, citing Tr. 8, at 160; Tr. 12, at 120, 122).

Mass-Am notes that it sought local approval of the project to maintain good community relations and in recognition of valid customer concerns (*id.* at 9-10). The Company maintains that its initial decision to site the WTP at Free Street was sound and noted its belief that environmental issues at the site could have been resolved (Company Brief at 11, 35; Company Reply Brief at 22-23). Mass-Am maintains that it is inherent in the nature of the water industry to require that facilities be sited in wetland or floodplain areas (Company Reply Brief at 23). Mass-Am states that its later decision to resite the WTP, in light of emerging

uncertainties about the outcome of further environmental studies and deadlines imposed by the SDWA, was also prudent and that the design costs associated with Free Street were prudently incurred (Company Brief at 11, 35-36; Company Reply Brief at 23).

D.P.U. 95-118

Page 36

Mass-Am argues that its selection of Main Street 1 was the prudent outcome of the selection process which also facilitated the intended use of the Free Street plans for construction at that location (Company Reply Brief at 23-24). The Company asserts that, given the information it had at the time, its proposal to site the WTP at Main Street 1 was reasonable and viewed as superior to locating the plant at its ultimate location, which required extensive redesign (id. at 24-25). Mass-Am asserts that its efforts to obtain local approvals for the WTP were reasonable and proper (id. at 25). Mass-Am acknowledges that the Main Street permitting process gave rise to considerable controversy, and argues that its substantial design modifications were made to meet these concerns (Company Brief at 12-13; Company Reply Brief at 4546). The Company asserts that the record evidence demonstrates that the Hingham ZBA's approval was contingent upon Mass-Am fulfilling the required conditions, including resiting and redesigning the WTP (id. at 4243). Mass-Am argues that Hingham's assertion that it had the right to mandate project changes yet claim that the acceptance of those changes was imprudent and unreasonable is not tenable (Company Brief at 44).

Mass-Am argues that both the Hingham ZBA and HWSC had every reason to know, or should have known, that design changes would have significant cost impacts (id. at 31). According to the Company, the Hingham ZBA and HWSC could have retained Weston & Sampson which had consulted with the HWSC (id. at 32). Additionally, the Company states that both the Hingham ZBA and HWSC had access to the minutes of the HWSC which Mass-Am alleges contain information concerning the cost impacts associated with the WTP (id. citing Exh. MA-197). Mass-Am contends that the ZBA's extensive review and use of its consulting engineers, Gale Associates, in addition to its access to Weston & Sampson

D.P.U. 95-118

Page 37

through the HWSC, should have made it clear to the Hingham ZBA that design changes had potential cost impacts (id. at 33-34). The Company further contends that the Hingham ZBA had been directly informed on a number of occasions about the magnitude of cost impacts associated with design changes (Company Brief at 34; Company Reply Brief at 26-27). Pointing to the testimony of Ms. Shultz and Dr. Reimold concerning the role financial considerations play in Hingham's zoning process, Mass-Am asserts that cost impacts were not of paramount concern to Hingham during the permitting process, (Company Brief at 34; Company Reply Brief at 28).

While the Company acknowledges that it was only able to provide "order of magnitude" cost impacts and not specific cost impacts for individual modifications, Mass-Am contends that this does not equate with mismanagement (Company Reply Brief at 27-28). The Company maintains that, given the project's design flux, unresolved permitting issues, and pending DEP review, it would have

been impossible to obtain meaningful contract and component bids and prices (id. at 28, 31-32).

Mass-Am notes that its selection of Bec-Mor was due to its considerable experience in the design and construction of water treatment plants, and to the innovative contract features which included a GMP and incentive mechanism (id. at 14). The Company emphasizes that all of the subcontracts, representing approximately 80 percent of construction costs, were competitively bid (id. at 14, 40). With respect to engineering fees and Bec-Mor's construction management, the Company contends that Hingham disregarded the significant cost savings accruing from the value engineering study, the experience of Bec-Mor on similar projects, the independent evaluations of Bec-Mor's efforts, and the incentive provisions of the contract (Company Brief at 39-40; Company Reply Brief at 31-32).

D.P.U. 95-118

Page 38

The Company argues that the analysis by Hingham's own witness indicates that total construction costs were well within the range of plants compiled by DEP and contradicts the results of the 1990 report prepared by this witness at Weston & Sampson (Company Brief at 37; Company Reply Brief at 47-49). Mass-Am argues that the GMP for the WTP is well within the range of construction costs for treatment facilities noted by DEP and that Hingham's witness revised his testimony to state that the WTP's costs were not as overstated as he initially contended (Company Brief at 37, citing Tr. 13, at 223-225). The Company further argues that none of the water treatment facilities examined by Hingham involved a complete plant redesign, had zoning requirements of the nature imposed on Mass-Am, and required the same type of equipment (Company Brief at 37-38, citing Tr. 13, 132, 149-157). With respect to the AWWA Study, the Company contends that this represents an unpublished draft which had a many problems and did not take into account site-specific conditions (Company Brief at 38, citing Tr. 1, at 11; 13, at 167-168, 176-177, 183). The Company concludes that the intervenors' arguments on this issue are unsupported by the record and thus should be rejected (Company Brief at 40; Company Reply Brief at 34).

With respect to the feasibility of sludge lagoons, Mass-Am disputes the contention that sludge lagoons could have been used at Main Street (Company Brief at 29-30). The Company cites the topographical conditions, local regulations, and the May 1992 evaluation of Weston & Sampson as support for the decision not to use sludge lagoons (Company Brief at 38-39, citing Exh. MA-199, 1992 Report at IV; Company Reply Brief at 29-30).

With regard to Oxford's proposal that the WTP surcharge be modified to incorporate the Accord pumping station, Fulling Mill pumping station, and off-site piping modifications, the Company contends that this is contrary to well-established principles and Department

D.P.U. 95-118

Page 39

ratemaking practices (Company Reply Brief at 56-58). Mass-Am argues that the record evidence demonstrates both prior and future significant capital investments made in Service Area B in general

and in Oxford in particular (id. at 56). The Company contends that general ratemaking principles, rate design and cost allocation principles, and Department precedent support the proposition that all customer classes in all service areas share in costs when the level and quality of service is comparable across service areas (id. at 57). Class-Am states that its proposed surcharge for Service Area A alone is appropriate given the magnitude in costs and the significant difference in water treatment between Service Area A and Service Area B (id. at 57-58).

F. Analysis and Findings

1. Standard of Review

a. Prudent Used and Useful

For costs to be included in rate base, the expenditures must be prudently incurred and the resulting plant must be used and useful to ratepayers. D.P.U. 85-270, at 20. The prudence test determines whether cost recovery is allowed at all, while the used and useful analysis determines the portion of prudently-incurred costs on which the utility is entitled to earn a return. Id. at 25-27.

A prudence review involves a determination whether the utility's actions, based on all that the utility knew or should have known at the time, were reasonable and prudent in light of the extant circumstances. Such a determination may not properly be made on the basis of hindsight judgments, nor is it appropriate for the Department merely to substitute its own judgment for the judgments made by the management of the utility. *Attorney General v. Department of Public Utilities*, 390 Mass. 208, 229 (1983). A prudence review must be

D.P.U. 95-118

Page 40

based on how a reasonable company would have responded to the particular circumstances and whether the company's actions were in fact prudent in light of all circumstances which were known or reasonably should have been known at the time a decision was made. *Boston Gas company*, D.P.U. 93-60, at 24-25 (1993); D.P.U. 85-270, at 23-24; *Boston Edison Company*, D.P.U. 906, at 165 (1982). A review of the prudence of a company's actions is not dependent upon whether budget estimates later proved to be accurate but rather upon whether the assumptions made were reasonable, given the facts that were known or that should have been known at the time. D.P.U. 93-60, at 35; *Fitchburg Gas and Electric Light Company*, D.P.U. 84-145-A at 26 (1985).

The Department's definition of used and useful for ratemaking purposes has required that a plant proposed for inclusion in rate base must be in commercial operation and provide net benefits to customers. D.P.U. 85-270, at 25; *Western Massachusetts Electric Company*, D.P.U. 84-25, at 37 (1985). The application of this standard has been on a case-by-case basis. D.P.U. 84-25, at 37. In applying the used and useful standard, the Department does not allow parties to relitigate whether an investment is used and

useful but will not preclude a review of used and usefulness where extraordinary circumstances are found to exist. D.P.U. 93-60, at 43; *Berkshire Gas Company*, D.P.U. 92-210-B at 14 (1993).

b. Post-Test Year Additions

For ratemaking purposes, the Department determines rate base according to the cost of the utility's plant in service as of the end of the test year under a used and useful standard. In order to

qualify for inclusion in rates, a utility's plant investment must be in service and provide benefits to customers. D.P.U. 85-270, at 60. With respect to plant installed after the end of the test year, it is the Department's policy not to adjust year-end

D.P.U. 95-118

Page 41

rate base, unless the utility demonstrates that the addition represents a significant investment which has a substantial impact on a company's rate base. Massachusetts-American Water Company, D.P.U. 1700, at 5-6 (1984); Bay State Gas Company, D.P.U. 1122, at 19 (1982).

The Department notes that the WTP was placed into service in April 1996 after the end of the test year in this case. The Facility Lease entitles Mass-Am to the use of the WTP but does not give the Company any ownership interest in the property. Accordingly, there is no basis for regarding the WTP as a post-test year addition to Mass-Am's rate base. D.P.U. 85-270, at 186. See also, New England Telephone and Telegraph Company d/b/a NYNEX, D.P.U. 94-50, at 436 (1995). Accordingly, the Department shall not apply its post-test year rate base addition standard to the WTP.

c. Affiliated Transactions

In order to qualify for inclusion in rates, any payments made by a utility to an affiliate, must be: (1) for activities that specifically benefit the regulated utility and which do not duplicate services already provided by the utility; (2) made at a competitive and reasonable price; and (3) allocated to the utility by a formula which is both cost-effective in application and nondiscriminatory for those services specifically rendered to the utility by the affiliate and for general services which may be allocated by the affiliate to all operating affiliates. Milford Water Company, D.P.U. 92-101, at 42-46 (1992); AT&T Communications of New England, D.P.U. 85-137, at 51-52 (1985).

The Company is leasing the WTP from an affiliate. Were the Department to merely accept a utility's lease expense based on an agreement entered into with an affiliate under the

D.P.U. 95-118

Page 42

known and measurable standard,²⁴ the Department would be effectively providing utilities and holding companies with a vehicle by which they could evade Department oversight and insulate their shareholders from the regulatory consequences of management decisions. Accordingly, the Department finds that the lease payments should be evaluated based on the affiliated transactions standard rather than the known and measurable standard.

d. Conclusion

Based on the above considerations, the Department finds it appropriate to apply its prudent used and useful standard, as well as its affiliated transaction-standard, to the WTP's costs. As part of this evaluation, the Department shall examine the overall costs of the project to determine the level of lease payments to MassCap which should be included in the Company's cost of service.

2. Water Treatment Plant

a. Basis of Cost Differences

By the Company's own admission, the WTP was constructed at a higher cost than that generally experienced in other water

treatment facility projects. Hingham proposed three cost estimating techniques on which to evaluate the Company's total construction costs and concluded from that data that the excess costs associated with the WTP were in the range of \$10 million. Hingham's source data fail to take into account site-specific conditions and do not reflect specific processes that may be required at individual water treatment facilities.

[24] Normally, the Department recognizes a utility's lease expense based on signed contracts with unaffiliated landlords as known and measurable changes to test year cost of service, thereby qualifying for inclusion in rates. Nantucket Electric Company, D.P.U. 88-161/168, at 123-125 (1989); Western Massachusetts Electric Company, D.P.U. 85-270, at 183-187 (1986).

D.P.U. 95-118

Page 43

Further analysis of specific fact situations, including siting, permitting, water conditions, and local construction practices would be necessary to evaluate the comparative costs of water treatment facilities. In general, the more recent the construction of a water treatment facility and the closer its location to the water treatment facility, the more reliable is the data used in assessing comparative construction costs. Therefore, the Department declines to use the comparative cost data from the AWWA Study, DEP, or Weston & Sampson as the sole basis on which to make our determination as to the prudence of Mass-Am's costs associated with the WTP.

However, the data presented by Hingham does have value as a general reference on the cost of water treatment facilities. The information contained therein provides a starting point on which to begin the evaluation of Mass-Am's WTP and any differences between these costs and the cost data provided in the respective studies. Accordingly, the Department finds that the three cost-estimating techniques presented by Hingham have limited value in evaluating Mass-Am's prudence associated with its WTP. To make our findings on the costs of the WTP project, the Department determines that it is appropriate to examine the nature of the cost components and the reasons for the increased costs, in light of our prudent, used and useful standard and our affiliated transaction standard.

b. Need for Water Treatment Plant

The intervenors in this proceeding have questioned the need for the WTP, as well as the design size of the WTP. The record demonstrates that the Company's surface supplies required filtration in order to comply with the SWTR, and that ground water supplies fail to meet Secondary Standards. The record further demonstrates that the treatment of virtually all of Mass-Am's sources of supply, including those sources not covered under the terms of

D.P.U. 95-118

Page 44

the Consent Order, will assist in resolving long-standing quality of service issues, including aesthetic concerns. See D.P.U. 88-170, at 49-51; D.P.U. 1590, at 4246; D.P.U.; 1118, at 30-31 (1983); D.P.U. 322, at 14-16 (1981). The Department also notes that among

the benefits of the WTP will be the enhanced ability to meet maximum-day demand, as illustrated by the increased hydraulic capacity at Accord Pond. Accordingly, the Department finds that the Company's decision to commence the project was reasonable and prudent.

Regarding the Company's decision to construct a centralized WTP to meet these treatment requirements, the record evidence supports Mass-Am's evaluation of the merits of centralized treatment. The Company's centralized treatment approach was also supported by Weston & Sampson's independent analysis. Regarding the Company's decision to size a centralized WTP for 7.7 MGD, the Department recognizes that this capacity level represents a peak demand requirement, which is not expected to be reached on a daily basis. Nonetheless, the Department has long recognized the need for utilities to maintain production systems sufficient to meet peak demands, subject to reasonable conditions. Nantucket Electric Company, D.P.U. 88-161/166, at 31 (1989); Lowell Gas Company, D.P.U. 19037/19037-A at 14-15 (1977). Cf. D.P.U. 93-60, at 41-44. Additionally, water utilities providing fire service must maintain production capability to meet fire demands as necessary. See Whitinsville Water Company, D.P.U. 18070, at 4 (1974). In the case of water utilities, these supplies must be treated as necessary to meet federal and state drinking water requirements. A water utility must maintain sufficient capability to treat its supplies as part of its obligation to provide an adequate supply of potable water to its customers. See Dedham Water Company, D.P.U. 85-188, at 9-10 (1986). Mass-Am would be remiss in its public service obligation if it failed to take those efforts necessary to assure an adequate

D.P.U. 95-118

Page 45

supply of potable water to its customers. See Wylde Wood Water Works, D.P.U. 86-93, at 27-32 (1987). See also Boston Edison Company, D.P.U. 85-266-A/271-A at 6-15 (1986).

The intervenors have pointed to Downing Street's peaking capacity as a means by which the design size of the WTP could have been reduced. However, the record clearly demonstrates that, even with Downing Street being treated separately, a smaller treatment facility would have insufficient capacity to treat maximum day

requirements. While the intervenors have presented evidence that increased conservation measures through either customer actions or an IRP would serve to reduce total system demand, and therefore warrant a smaller-capacity WTP, the record evidence demonstrates that residential use, a major component of Mass-Am's total demand, will remain relatively unchanged. Moreover, the evidence supports a finding that any reasonably conceivable demand reductions will have little impact on the maximum-day demand that the WTP is designed to meet.

The Department finds that the Company has appropriately considered the benefits of centralized treatment for the appropriate system demands. Accordingly, the Department finds that the Company's decision to design a centralized WTP with a capacity of 7.7 MGD was reasonable and prudent.

c. Free Street Site

The Department recognizes the siting characteristics typically encountered by water utilities in locating their facilities. The prevailing conditions at Free Street should have alerted the Company to the possibility that the site had a high risk of

rejection as a suitable location for a WTP. Mass-Am acknowledges that the existence of wetlands was a potential issue for the proposed Free Street location, but represents that it had no reason to believe the possible barriers to siting the WTP at that location were insurmountable. The Company

D.P.U. 95-118

Page 46

proceeded to conduct design and siting work associated with Free Street, without a clear sense of the potential outcome of the siting review process. The record further demonstrates that Mass-Am engaged in an extremely limited site selection process for Free Street, and that a comprehensive site evaluation process was only conducted during the permitting process for that location.

Consistent with the exercise of reasonableness and prudence, it would have been appropriate for Mass-Am first to establish a sound process for identifying sites using appropriate criteria. Once a site had been identified, it then would have been appropriate for the Company to consult with the necessary local and state boards and commissions as to whether the proposed site required further study as a prelude to comprehensive design and siting work. While the Department recognizes that the Company would have incurred a certain level of permitting expenses, we are not persuaded that a siting process under the scenario described above would have required the \$615,000 that Mass-Am expended on permitting fees. The evidence leads the Department to conclude that the Company acted imprudently by failing to make appropriate initial inquiries into the feasibility of the Free Street site.

Accordingly, the Department finds that \$615,000 in permit acquisition costs relative to Free Street were imprudently incurred and should not be reflected in the operating lease. Because Mass-Am has represented that the Free Street design was transferrable to the Main Street site, the Department shall consider the prudence of the Company's expenditure of \$820,000 in design work for the Free Street site below.

d. Main Street 1 and 2 Permitting

The Company decided to work with local bodies in permitting the WTP, rather than

D.P.U. 95-118

Page 47

bypass them and seek zoning approvals from the Department. Preferring to become involved only if municipalities and petitioners are unable to reach agreement, the Department encourages the use of local processes for siting utility facilities. We commend Mass-Am for its efforts to work with local agencies in Hingham to site and construct the WTP.

Nevertheless, the Department expects utilities to bear in mind their obligation to provide ratepayers with safe, reliable and least-cost service. Incentive Regulation, D.P.U. 94-158, at 3 (1995). In light of that obligation, companies are expected to work with local agencies in an attempt to balance the interests of the local community and those of the general public as embodied by the utilities' ratepayers. Our review of the record evidence, including the audio tapes of the Hingham ZBA hearings and the information supplements provided in Exhibit DPU-2, leads us to conclude that the concerns expressed by the public over Mass-Am's proposal to site the WTP at Main Street 1 had some validity. The Company must

bear in mind that it has the necessary technical expertise which other parties may not possess and therefore bears the responsibility to be open and responsive to both its ratepayers and local agencies. See Ashfield Water Company, D.P.U. 1438/1595, at 9-10 (1984).

While utilities have an obligation to be sensitive to local concerns in siting their facilities, it is incumbent upon them to make clear to local authorities the cost impacts associated with design changes made to respond to local permitting requirements. Our examination of the record evidence has included the audio tapes of the Hingham ZBA hearings and statements made by Company officials. Based on this information, the Department concludes that although Mass-Am could have presented its position on cost impacts more clearly, the Company had apprised the Hingham ZBA of the general magnitude

D.P.U. 95-118

Page 48

of the impact of design modifications on the overall WTP project.

A degree of controversy has revolved around the Company's communications with the Hingham ZBA during the permitting process, as detailed in Exhibit DPU-21. This exhibit, which memorializes a conversation between Dr. Reimold and Ms. Horn, identifies issues of concern to both the Hingham ZBA and Planning Board, describes the substance of certain conversations between a Hingham ZBA member and opponent of the WTP, and lays out Mass-Am's contemplated design modifications which ultimately led to the granting of the required permits by the Hingham ZBA. Hull contends that the conversation constituted ex parte communication. While certain aspects of the memorandum suggest that Dr. Reimold's conversations with Ms. Horn extended beyond a comparison of notes intended to facilitate the

Company's response to concerns raised at the Hingham ZBA hearings, the Department recognizes that it has no special authority with respect to the day-to-day operations of local government officials. The Hingham ZBA is familiar with its policies and practices, and such conversations may be appropriate. Accordingly, we decline here to make any findings with respect to the local permitting process in Hingham.

Hingham and Hull have argued that the Company should have undertaken cost-benefit analysis for each of the project modifications it made as part of the permitting process for Main Street 2. The Department has found that cost-benefit analyses for both discretionary and non-discretionary utility projects, especially large, multi-year projects, are necessary in order to assess comparative costs of maintaining existing systems versus alternatives. D.P.U. 93-60, at 27. In this case, the record demonstrates the need for a WTP in Hingham, as supported by both the Company's analyses and the independent assessments performed by Weston & Sampson. With respect to the permitting process for the WTP, the Department

D.P.U. 95-118

Page 49

finds that the ongoing state of design changes, outstanding permitting issues, and DEP review processes made it impossible for the Company to obtain meaningful contract and component bids or prices. Finally, the Department finds that both the value engineering studies performed by the Company and the contract

provisions facilitating cost-savings through design modifications represents the application of cost-benefit analysis. Accordingly, the Department finds that the Company's actions with respect to cost-benefit analyses for the WTP permitting process are prudent and reasonable.

e. Construction of Main Street 2

In view of the cost increases associated with the design changes made during the permitting process, the Department finds it appropriate to assess each component to determine whether the Company's actions were prudent and reasonable. With respect to the relocation of the WTP to Main Street 2, the Department notes that the total incremental cost associated with this resiting was \$553,000. [25] In view of the desirability of the Main Street parcel as a general site for the WTP, and local opposition to the Company's original placement of the WTP at the abandoned cornfield, the Department finds that the Company's decision to relocate the WTP to Main Street 2 was prudent and reasonable. The Department also finds that, based on the necessary work required at Main Street 2, the incremental costs associated with relocating the WTP at Main Street 2 would have been incurred regardless of when the Company sited the WTP at that location. Accordingly, the Department finds that the incremental cost of site work associated with

[25] While a handwritten notation on Exhibit DPU-25 indicates a total cost of \$1,213,000, the additional \$660,000 represents the cost of high service gradient piping needed to connect Accord Pond to the WTP. The Department determines that the \$660,000 is not a component of the WTP, but rather constitutes an element of the Company's off-site piping project addressed below.

D.P.U. 95-118

Page 50

Main Street 2 was prudent and reasonable.

The Department acknowledges that a fully-enclosed WTP with elevation restrictions is an unusual design for a water treatment facility. In view of the desirability of the Main Street location in general, and the need for a minimal plant footprint to address local concerns, the Department finds that the Company acted prudently and reasonably in deciding to construct a single-structure WTP. The Department also finds that the incremental costs of \$2,170,000 associated with erecting a single-structure WTP were prudent and reasonable.

Based on Mass-Am's decision to relocate and redesign the WT-P, the Department determines that an evaluation of the Company's expenditure of \$820,000 in Free Street design costs is necessary. While the Company represented the Free Street design as being transferrable to the Main Street location, the Department notes that water treatment plant designs are often site-specific in nature. Had the Company properly evaluated the Main Street site as a possible location for a WTP, the record evidence leads us to conclude that the Free Street design could not have been used at that site without modification. We view the Company's decision to transfer the Free Street design to Main Street 1 as an after-the-fact attempt to salvage the results of a flawed siting process. Accordingly, the Department finds that the Company's expenditure of \$820,000 in Free Street design costs was imprudent

and unreasonable. Accordingly, the Department shall remove \$820,000 in design expenses from the total WTP project cost.

With respect to the concealment of HVAC equipment, the Company reported a total cost of \$4,260,000 for its HVAC system, and indicated that this represented an aggregate for the entire WTP, versus the incremental cost associated with the permitting process. The Department is unable to determine from the record the extent to which the approximately

D.P.U. 95-118

Page 51

\$4.3 million in HVAC equipment is incremental. The Department has accepted the Company's decision to place the WTP into a single structure, which would have a significant impact upon total HVAC-related expenditures. Based on this consideration, the Department concludes that the incremental costs associated with concealing the HVAC equipment would have been small in relation to the total expenditures for this category. Thus, there is no basis on which to conclude that these expenditures were imprudent and unreasonable.

With respect to the \$224,000 in landscaping required to screen the WTP from abutters and revegetate the access road and right of

way, the Department finds that expenditures of this nature are common to construction projects of this type, and would have been necessary regardless of where the WTP was located. Accordingly, the Department finds that the expenditure of \$224,000 for landscaping was prudent and reasonable.

With respect to the \$200,000 incurred for the architectural treatment of the WTP, the Department is unpersuaded that this additional cost was entirely necessary to obtain the necessary permits for the WTP. Given the scope of landscaping used for screening purposes, the Department is unpersuaded that the additional expenditure of \$200,000 in precast concrete panels for the WTP structure was necessary. Accordingly, the Department finds it appropriate to remove \$200,000 in construction costs from the WTP.

With respect to the Company's decision to redesign its treatment process for the use of liquid sodium hypochlorite at a total cost of \$115,000, the Department notes that while liquid sodium hypochlorite is more expensive to use than chlorine gas, liquid sodium hypochlorite is easier to handle and possesses safety advantages over chlorine gas. Since the WTP is located in residential neighborhood, the Department finds that the Company's decision to change the treatment process at the WTP to liquid sodium hypochlorite was a

D.P.U. 95-118

Page 52

prudent and reasonable design modification.

With respect to the \$227,000 in building-wide sprinkler systems, versus the limited extent to which they would normally be found in a water treatment facility, the Department notes that the full sprinkler system at the WTP is beneficial to all parties. Hingham and abutters to the WTP are benefited through a more proactive fire protection system. Although the WTP consists largely of non-combustible materials and is minimally occupied, the Company is benefited through the improved ability to protect its assets. Accordingly, the Department finds that the use of building-wide

sprinkler systems was prudent and reasonable.

With respect to the restrictions imposed by the Hingham ZBA Order on residuals trucking, resulting in additional project costs of \$697,000, the Department notes the residential nature of the Main Street site and traffic concerns in that area. The Department declines to second-guess the determination of the Hingham ZBA, a local government body, that restrictions would be required at the Main Street site for the protection of the general public. Accordingly, the Department finds that the additional costs resulting from restrictions placed on the Company's residuals handling were prudent and reasonable conditions of the permit.

The Company elected to use a construction management approach in constructing its WTP. While the use of construction management approaches is not common in projects of this nature, there is no evidence in the record to support the contention that construction management was inappropriate for Mass-Am's WTP project. Hingham and Hull contend that the use of construction management by Bec-Mor

resulted in inflated costs. However, the Department is not persuaded that the construction management approach in and of itself resulted in excessive costs to Mass-Am. While Hingham and Hull contend that the Bec-Mor

D.P.U. 95-118

Page 53

contract resulted in unnecessary contractor fees of between \$1.5 and \$2.2 million, this expense component would have been incorporated into Bec-Mor's general conditions and supervision fee of \$2,512,407 in a general contractor approach. Hingham and Hull have failed to demonstrate that Bec-Mor's general conditions and supervision fee would have been less under a traditional general contractor approach than the combined contractor fee and general conditions and supervision fee. Accordingly, the Department finds that Hingham and Hull have failed to substantiate this proposed reduction to the total WTP project costs.

The Department also determines it appropriate to comment upon the Company's decisionmaking processes with respect to its selection of Bec-Mor as construction manager. Bec-Mor initially approached the Company with an offer to provide its services for \$36 million, which the Company rejected as too high. Bec-Mor returned with a second offer of \$28 million, which was the basis of negotiations between the parties. The record evidence demonstrates that the second price relied on an engineer's estimate, which was intended for budgeting purposes and does not necessarily reflect what a contractor's bid may resemble. While the Department acknowledges the expertise of Bec-Mor in the field of water treatment facility construction, the circumstances which led to the selection of Bec-Mor leave the Company open to criticism that its negotiation processes may not produce the most cost-effective price for ratepayers. The Department has previously noted the need for utilities to institute appropriate bid process mechanisms to prevent abuses. Milford Water Company, D.P.U. 84-135, at 3-4 (1985). Accordingly, Mass-Am is hereby directed to evaluate its bidding and negotiation practices, and be prepared to address these concerns as part of its next rate case.

D.P.U. 95-118

Page 54

With respect to the Company's use of value engineering at a

cost of \$270,000, the Department notes that the WTP project's design was created on an on-going basis, taking into consideration local permitting requirements, technological improvements, and outside expertise. As described by the Company, this process identified a number of potential cost savings measures, of which over \$1.4 million were ultimately accepted and incorporated into the Main Street 2 design. The Department finds that the savings resulting from the value engineering process represents a five-fold return on the Company's expenditure, and therefore represents significant cost savings that would be passed on to Mass-Am's ratepayers. Additionally, the Department finds that the participation and contributions made by the parties to the value engineering process were essential to the process, complementary in

nature, and not duplicative of one another. Given the size and complexity of the WTP project in relation to the Company's total operations, and the associated cost impacts upon ratepayers, the Department finds that Mass-Am's decision to commission a value-engineering study was prudent and reasonable.

With respect to the Company's selection of technology for the WTP, the Department finds that, while Mass-Am may not have engaged in as extensive a search for process equipment as advocated by the intervenors, its design criteria were reasonable and appropriate.

The Department also finds that the results of the Company's pilot tests and value engineering process were properly applied to acquire the appropriate technology for the WTP. Accordingly, the Department finds that the Company acted prudently and reasonably in evaluating the necessary technologies for the WTP.

With respect to Mass-Am's decision to use centrifuges instead of lagoons for residuals handling, the record demonstrates that the Company had initially proposed the use of lagoons

D.P.U. 95-118

Page 55

at Main Street 1, but withdrew the idea in the wake of public opposition. In any event, the Company's pilot tests with mechanical dewatering techniques, acknowledged to be a superior residuals handling technique over lagoons, produced unsatisfactory results and further deterred Mass-Am from pursuing the use of lagoons. The Company's decision not to use lagoons is further supported by the May 1992 report of Weston & Sampson, which concluded that mechanical dewatering techniques would be appropriate at the WTP given public concerns. In contrast, Hingham and Hull have not affirmatively demonstrated that the use of lagoons was feasible at Main Street 2 from either a physical or technical standpoint. Accordingly, the Department finds that the Company's decision to use centrifuge technology over lagoons or other mechanical dewatering techniques was prudent and reasonable.

f. Affiliated Transactions

Based on the foregoing, the Department finds that the WTP specifically benefits the Company and does not duplicate services already performed by Mass-Am. Additionally, the Department finds that because the WTP is for the exclusive use of the Company, allocation issues between Mass-Am and other AWW affiliates do not apply in this case. The Department has evaluated the cost basis for the WTP, has disallowed costs where appropriate, and concludes that the remaining costs associated with the WTP were based on a competitive and reasonable price. Accordingly, the Department finds

that the WTP meets the Department's affiliated transactions test.

g. Used and Useful

With respect to the issue of whether the WTP is used and useful, the record demonstrates that the DEP has approved the use of the WTP as a water treatment facility. The record also demonstrates that, barring unforeseen circumstances, the WTP will receive

D.P.U. 95-118

Page 56

the final independent engineer certification within the month, and that a certificate of occupancy is expected to be forthcoming for the WTP. Accordingly, the Department finds that the WTP meets the definition of used and useful. This finding is contingent upon the receipt of the final approvals which are currently pending. The Company is hereby directed to submit to the Department the final independent engineer certification for the WTP and the certificate of occupancy for the WTP as soon as they are issued.

3. Accord Pond/Fulling Mill/Off-Site Piping

With respect to the Company's Accord pumping station, the record demonstrates that this facility is currently in operation and providing service to Mass-Am's ratepayers. The record further demonstrates that the off-site piping has been completed, or will be upon the date of this Order. Viewing at them as part of the total WTP package, the Department finds that the Accord pumping station and off-site piping represent a significant addition to Mass-Am's year-end rate base. Therefore the Department will allow the inclusion of these plant components in rate base.

With respect to the Fulling Mill pumping station, the record demonstrates that this project component will not be completed until about two months after this Order is issued. Although the Fulling Mill pumping station is a component of the total WTP package which has been included in rate base as a significant post-test year addition to plant, the Fulling Mill pumping station is not yet in service and does not constitute in and of itself a significant addition to rate base. Therefore, the Department finds that the Fulling Mill pumping station does not warrant rate base inclusion. D.P.U. 1700, at 6; D.P.U. 1608, at 4. See also Boston Edison Company D.P.U. 160, at 15-17 (1982). Accordingly, the Department shall reduce the Company's proposed rate base by \$350,000, with a corresponding reduction to

D.P.U. 95-118

Page 57

property tax expense of \$5,904. Corresponding adjustments to depreciation expense and deferred income taxes are also required, and addressed below in the respective sections of this Order.

4. Conclusion

The Department has evaluated the prudence of Mass-Am's decisionmaking processes and handling of the construction of its WTP. As noted above, the Department has found \$1,435,000 in Free Street design and permitting costs and \$200,000 in architectural treatments to be imprudent, and excluded them from the basis of the lease payments to MassCap. The Company is hereby directed to revise the basis of its lease expense to remove these costs, totalling \$1,635,000, from recovery through the MassCap lease. While Schedule 11 of this Order does incorporate a disallowed lease expense, this is only a conservative estimate presented for purposes of

estimation. The Company pointed out during evidentiary hearings that the relationship between project lease component disallowances and the resulting lease expense is not straightforward in nature (Tr. 4, at 121-122). Therefore, the Company is hereby directed to

submit a revised lease expense consistent with the terms of this Order, together with all supporting workpapers and calculations, as part of its compliance filing.

The final costs of the WTP project will not be established with complete certainty until the project close-out occurs later this year. The Department has made a reasonable effort to identify the cost elements of the WTP project in the current record for a determination as to their eligibility for cost recovery. Nevertheless, we are aware that the project close-out, along with the final apportionment of construction savings between Bec-Mor and the Company, may produce additional savings that should be passed back to

D.P.U 95-118

Page 58

ratepayers. Accordingly, the Company is hereby directed to provide the Department and the parties in this proceeding with an accounting of the final cost of the WTP and related facilities once the project has been closed out. This report shall be provided in the same format as found on Sheet 6 of Exhibit DPU-57, but engineering services and other expenditures shall be broken out separately for the WTP, Accord pumping station, Fulling Mill pumping station, and off-site piping. Based on our evaluation of the information provided therein, the Department may, at its discretion, reopen the record for the purpose of recalculating the Company's WTP surcharge.

III. PROJECT FINANCING

A. Description of the Company's Financing of the WTP

To finance the WTP, Mass-Am proposed to use project financing[26] (Exh. MA-9 at 2). Established as a wholly-owned subsidiary of AWW for the sole purpose of financing and completing construction of the WTP, MassCap[27] bought the partially constructed WTP from Mass-Am pursuant to a facility sale agreement dated July 1, 1995 (Exh. MA-10, exh. RPF-8).

[26] In a project financing, the credit supporting the financing is based on revenues from an individual project, rather than through corporate or municipal credit (Exh. MA-9, at 2).

[27] The Department, in its Advisory Ruling, preliminarily found that MassCap is not subject to regulation under G.L. c. 164 and c. 165. Massachusetts-American Water Company, D.P.U. 95-41, at 4 (1995). The Department notes that advisory rulings are not binding upon the Department in any subsequent proceeding. A petitioner for an advisory ruling may not later plead estoppel in pais if the Department were later, in an actual adjudication based on an evidentiary record, to adopt a view of the law different than that adopted in an earlier advisory ruling. Phipps Product Association v. Massachusetts Bay Transportation Authority, 387 Mass. 687, 693 (1982); McAndrews v. School Committee of Cambridge, 20 Mass. App. Ct. 356 (1985).

D.P.U. 95-118

Page 59

To finance its purchase of the WTP, MassCap obtained access to \$37,700,000 in Series 1995 Water Treatment Revenue Bonds ("MDFA Bonds") issued by the Massachusetts Development Finance Agency ("MDFA") (Exh. MA-10, exh. RPF-4, at 2). [28] MassCap was required to satisfy significant MDFA technical requirements so that the MDFA Bonds could qualify as tax-exempt issues (Exh. MA-31). The MDFA Bonds were issued pursuant to a Loan and Trust Agreement ("MDFA Indenture") dated July 1, 1995 between MassCap, MDFA, and First Fidelity Bank, National Association, as trustee (Exh. MA-10, exh.

RPF-5 at 1). [29] As required under the terms of the MDFA Indenture, MassCap secured its obligation under the MDFA Bonds by issuing an equivalent amount of Series 1995 Mortgage Bonds ("Mortgage Bonds") pursuant to a second mortgage indenture ("MassCap Indenture") entered into with First Fidelity Bank, National Association as the mortgage trustee (Exh. MA-10, exh. RPF-6). The Mortgage Bonds were then issued to the MDFA as security for the MDFA Bonds (id.).

The Company hired Smith Barney, Inc. ("Smith Barney") to serve as an underwriter of MassCap's bonds which Smith Barney purchased at \$37,644,291 (Exh. MA-10, at 4, exh. RPF-4; DPU-99). [30] The MDFA Bonds were resold to the public for the same price on

[28] MDFA is a body politic and corporate created pursuant to G.L. c. 23A, s. 31. It was previously known as the Massachusetts Industrial Finance Agency ("MIFA"). For purposes of consistency, the Department uses the term "MDFA" throughout the order.

[29] Pursuant to the indenture, MDFA would loan the proceeds of the sale of the bonds to MassCap to finance a portion of the costs of the acquisition and construction of the WTP. Under its mortgage indenture, Mass-Am is limited to issuing its own bonds for up to 65 percent of the project cost (Exh. MA-10, at 9).

[30] Smith Barney purchased the MDFA Bonds on July 26, 1995 for \$37,644,291, receiving an underwriter's discount of \$656,841 (Exhs. MA-9, at 2; MA-10, at 6-7; DPU-99).

D.P.U. 95-118

Page 60

August 16, 1995 (Exhs. MA-9, at 2; MA-10, at 6-7; DPU-99). [31] The proceeds from the MDFA Bonds were lent to MassCap to acquire, construct, equip, and install the WTP (Exh. MA-10, exh. RPF-6 at 1). AWW, the parent of MassCap, infused \$5,553,747 in equity into MassCap, thus giving MassCap a capital structure consisting of 87 percent debt and 13 percent equity (Exh. DPU-107). The overall cost of capital for the project financing was 7.84 percent (Exh. DPU-98).

MassCap entered into a ground lease with Mass-Am, because the Company, and not MassCap, owns the real estate on which the WTP is located (Exh. MA-10, exh. RPF-7). Mass-Am stated that it will lease the WTP from MassCap for 40.5 years pursuant to a facility lease agreement ("Facility Lease") dated July 1, 1995 (Exhs. MA-36;

MA-10, exh. RPF-2 at 9). Under the Facility Lease, Mass-Am will begin paying rent to MassCap on or about June 1, 1996, identified as the "commencement date" (Exhs. MA-10 at 13, exh. RPF-2 at 4). [32] The Facility Lease expires on December 1, 2035, the date of

the final maturity of all of the MDFA bonds (Exh. MA-10 at 16).[33]
The payments under the Facility

[31] Interest on the bonds is subject to the Alternative Minimum Tax and the principal is amortized on a level debt service basis beginning in 1997 and ending in 2035 (Exh. MA-9, at 3). Yields on the bonds ranged from 6.25 percent for term bonds due in 2010 to 6.95 percent for term bonds due in 2035 (Exh. MA-10, at 10).

[32] The Facility Lease identifies the commencement date as the last to occur of the following dates: (a) the independent engineer hired by Mass-Am certifies that the "substantial completion date" under the contract among Mass-Am, MassCap, and Bec-Mor has occurred and that the facility is operational as a water treatment facility with a capacity of up to 7.0 MGD; (b) the town of Hingham Building Commissioner issues a certificate of occupancy; and (c) DEP approves the use of the facility (Exh. MA-10, exh. RPF-2 at 4).

[33] At the end of the Facility Lease, the lease can be renewed at which point the rent shall be 30 percent of the fixed basic rent as all of MassCap's debt to MDFA will have been serviced (Exh. MA-10 at 18-19).

D.P.U. 95-118

Page 61

Lease over the entire term will be used to pay the Mortgage Bonds held by the MDFA (id.).

The Company proposed to recover the costs associated with the Facility Lease payments from the customers in Service Area A through a rate surcharge (id.).[34] The Company estimated that the annual cost of the project for the average residential customer would range from \$269.54 in 1997 to \$455.80 in 2035 (Exh. MA-9 at 4).[35] The Company stated that the Facility Lease is an operating lease in accordance with the accounting requirements of the Financial Standards Accounting Board ("FASB") (Exh. DPU-91).[36] An operating lease represents a contract that does not result in an asset or liability being reflected on the lessee's balance sheet (Exh. MA-202, at 3). In contrast, a capital lease is reflected in the lessee's balance sheet as both an asset and a corresponding liability at the inception of the lease (id.). Mass-Am explained that if the Facility Lease had been structured as a capital lease, it would have been required to impute MassCap's debt to itself, carry the lease as an asset, and recognize an annual expense equal to the sum of the depreciation on the WTP and interest expense on the obligation (Exhs. MA-10, at 17-18; MA-202, at 5). Such a treatment would, according to the Company, place its own debt instruments into default under the terms of its mortgage indentures (Tr. 14, at 4-6).

[34] See Section VIII.C.2.b, below, for a detailed description of the surcharge mechanism.

[35] Assuming an 8 percent discount rate, this equates in present value terms to a cost ranging from \$231.09 in 1997 to \$20.98 in 2035 (Exh. MA-9, at 4).

[36] According to Paragraph 7 of Statement of Financial Accounting Standards No. 13, Accounting for Leases ("SFAS 13"), a lease is considered a capital lease if: (1) the lease contains an automatic transfer of title; (2) the lease contains a bargain purchase option; (3) the term of the lease is equal to or greater than 75 percent of the estimated economic life of the asset; and (4) the present value of the minimum lease payments is equal to or exceeds 90 percent of the fair market value of the property (Exh. MA-202, at 4).

D.P.U. 95-118

Page 62

At the end of the Facility Lease term, title to the WTP will remain with MassCap (Exh. MA-10, exh. RPF-2, at 57-58). [37] While it does not have an option to purchase the WTP, the Company has the right of first refusal if MassCap seeks to sell the property (id.). Mass-Am stated that it can exercise its right of first refusal, in accordance with the FASB operating lease standards, by acquiring the WTP on the same terms and conditions as are contained in any offer by any third party to acquire the facility at the end of the lease (id.). Alternatively, the Facility Lease provides a limited opportunity for Mass-Am to renew the lease (Exh. MA-10, exh. RPF-2, at 57-58). The Company stated that the Facility Lease is restricted to a maximum duration, including any renewal periods, of a term equal to 74 percent of the estimated economic life of the asset under lease in accordance with the FASB requirements (Exh. MA-10, at 18). According to the Company, the maximum lease term that could be applied to the WTP is 45 years (Tr. 4, at 102).

There are two components to the Facility Lease payments: fixed basic rent and percentage rent (Exh. MA-10, at 14). The fixed basic rent is a fixed monthly payment of \$250,000 intended to cover the semi-annual interest payments on the MDFA Bonds, to fund the various maturities of the several series of MDFA Bonds as the t become due, and to provide a return to MassCap (Exhs. MA-10 at 14, 15; MA-28). The Company stated that using a discount rate equal to Mass-Am's assumed incremental borrowing rate of 7.84 percent, the present value of the fixed basic rent at the beginning of the lease term is approximately 89.1 percent of the estimated fair value of the property, thus meeting FASB's conditions for an operating lease (id. at 14, 15; MA-28). The Company stated that allocation

[37] At the end of the lease, the facility will have been depreciated by approximately 68 percent (Exh. DPU-112).

D.P.U. 95-118`

Page 63

between fixed basic rent and percentage rent is driven by the need to meet FASB's net present value requirements to treat the Facility Lease as an operating lease (Exh. DPU-91).

The percentage rent component of the Facility Lease is calculated based on quantities of finished water processed by the project exceeding 30 million gallons monthly (Exh. MA-9 at 2). [38] The Company stated that this component is designed so that MassCap will receive a 15 percent after-tax return on equity or a 16.7 percent pre-tax return over the life of the Facility Lease (Exhs.

MA-10 at 15, 16; DPU-92). The difference between rent payments and debt service is largely associated with the percentage rent payment, which is expected to increase from \$571,000 in 1997 to \$2,912,000 in 2035 (Exh. MA-30). The actual return to AWW will depend upon the retained earnings eventually available to MassCap for the payment of such dividends (Exhs. DPU-91; DPU-110). The Company stated that there is an adjustment factor that is intended to "true-up" percentage rent payments every five years over the course of the Facility Lease term to help ensure that the after-tax rate of return on equity is maintained (Exh. MA-30).[39] Overall, rent payments are expected to increase by 1.4 percent annually, which the Company estimated to be below general inflation projections (id.).

The Facility Lease also requires the initial rating on the MDFA Bonds to be affirmed by two nationally recognized rating agencies after the Department's rate order in this proceeding to assure that the resulting revenues provide credit equal to or greater than the

[38] The 30 million gallons per month threshold was arbitrarily selected (Exh. MA-10, at 15). The Company's average demand in Service Area A is approximately 107 million gallons per month (1994 Annual Return at 415).

[39] The "true up" component adjusts the percentage rent every five years to the extent actual percentage rent payable differed from that estimated when the lease was signed and which provides MassCap with a return on equity of 15 percent (Exh. MA-30).

D.P.U. 95-118

Page 64

level of credit assumed at the time the MDFA Bonds were issued (Exh. MA-10, at 11, exh. RPF-2, at 31). The Company stated that Mass-Am's own credit is supporting the payments under the Facility Lease (Exh. MA-9, at 2). The Company presented evidence that Moody's, Standard & Poor's and Fitch would rate it between the weak investment grade and strong non-investment grade categories (i.e., Ba/BB/BB to Baa/BBB/BBB) (id.). The Company stated that if the level of rates authorized by the Department, viewed in light of Mass-Am's overall revenues and financial condition, is deemed by the rating agencies to be insufficient for the Company to meet its general obligations together with its obligation to make monthly payments under the Facility Lease, MassCap can redeem a sufficient

amount of MDFA Bonds to reduce its debt service to a level that can be supported under the final Department order (Exh. MA-10, at 12). The Company further stated that if MassCap is unable to redeem a sufficient amount of MDFA bonds, Mass-Am will be required to repurchase the WTP from MassCap by undertaking a traditional financing (id.).

The Company stated that it structured the capital contribution agreement dated July 1, 1995 to provide the necessary assurance to bondholders that Mass-Am will have the financial capability to repurchase the WTP from MassCap, if necessary (Exh. MA-10 at 12, exh. RPF-9).[40] The Company stated that under the capital contribution agreement, AWW is taking the risk that the Department will permit recovery of the full lease payments due to be paid by the Company to MassCap (id.).[41] The Company stated that if AWW had not entered

[40] The capital contribution does not constitute a financing arrangement requiring Department approval under G.L. c. 164, s.s. 10, 14, 17A. D.P.U. 9541, at 9.

[41] Mass-Am states that if it had financed the facility in a traditional fashion, the Company and not necessarily AWW would have taken the construction risk and the regulatory risk (Exh. DPU-109).

D.P.U. 95-118

Page 65

into the capital contribution agreement, the interest rate on the MDFA Bonds and the rent payments under the Facility Lease would have been higher and the MDFA Bonds may not have received investment grade rating because of the risks perceived by the putative bondholders at the time the bonds were sold about whether there would be a sufficient revenue stream to cover the payments under the Facility Lease (id.). The Company stated that at the time a bond rating reaffirmation is obtained by Mass-Am, the capital contribution agreement will be terminated, and the full sale and lease-back accounting treatment will be implemented such that neither the construction work in progress nor the financing obligation will appear on Mass-Am's balance sheet (Exh. MA-10, at 24).

In most project financings, the revenue stream of the facility user is in place at the time the bonds are sold (id. at 6). The Company stated that the timing of the instant financing was unusual in that the revenue stream available to Mass-Am to make monthly payments required by the Facility Lease will not be in place to fund the MDFA Bonds until about June 1, 1996, the commencement date of the Facility Lease (id. at 6). The first interest payment made on the MDFA Bonds on December 1, 1995 was covered through the use of part of the proceeds that were deposited into a debt service reserve fund to cover any early interest payments (id. at 11).

B. Position of the Parties

1. Joint Hingham and Hull

Hingham and Hull state that AWW's common ownership of the Company, MassCap, and AWW Service, as well as the associated transactions entered into for the project financing, require the Department to subject the transactions to a greater level of scrutiny than would be the case if all parties were not affiliated (Joint Intervenor Brief at 34-35).

D.P.U. 95-118

Page 66

They further note that the Department has clearly expressed its intention to examine the use of subsidiary structures and project financing and that Mass-Am was specifically informed that G.L. c. 165, s.s. 4 and 4A would provide for Department oversight of the project financing (id. at 35, citing Massachusetts-American Water Company, D.P.U. 95-41, at 8, n.3 (1995); Harbor Electric Energy Company, D.P.U. 90-288, at 12 (1991)).

Hingham and Hull maintain that the project financing was not developed through arms' length transactions in view of the activities between AWW and its affiliates and the capital contribution provisions of the project financing structure (Joint Intervenor Brief at 35-36). Hingham and Hull conclude that it is

appropriate for the Department to review the transactions to ensure that they specifically benefited ratepayers, were secured at competitive and reasonable prices, and allocate benefits and burdens in a cost-effective and non-discriminatory manner (id. at 36).

According to Hingham and Hull, the Company's stated rationale for project financing, i.e., mitigating rate impacts, can be achieved just as well under traditional financing (id. at 67). Hingham and Hull note the following three areas of concern regarding the structure of the project financing: (1) the return on equity to MassCap; (2) the inflexibility of the Company's financing arrangement; and (3) accelerated cost recovery (id.).

Hingham and Hull contest the proposed 15 percent return on MassCap's equity for two reasons. They argue that the Company offered no credible evidence to support the reasonableness of the proposed return (Joint Intervenor Brief at 69). They note that the Company was unable to identify significant risks for either Mass-Am or MassCap and that the Company indicated a different return on equity could be applied (Joint Intervenor Brief at 69-70, citing Tr. 4, at 158-160). While Mass-Am identified credit rating and construction

D.P.U. 95-118

Page 67

risks as justification for the proposed return, Hingham and Hull note that the credit risk actually represented rate risk and that construction risk had been minimized by the use of Bec-Mor and the fact that MassCap took over the project well into the construction phase (id. at 70). Furthermore, Hingham and Hull point out the role of the fail-safe elements of the financing terms and note that if rating agencies decline to recertify the bond ratings, the total deal would be undone and traditional financing would be undertaken (id.).

Hingham and Hull observe that there is no open market

competitive basis on which to conclude a 15 percent return on equity is warranted for MassCap (id.). They contend that the Company's rate of return analysis is predicated on the assumption that an arms' length transaction exists between MassCap and the Company (id. at 71). Hingham and Hull argue that by using a rate of return equal to prime, AWW will be made whole for its investment, bondholders will not be adversely affected, and typical residential ratepayers would have reduced rates of approximately \$100 per year (Joint Intervenor Reply Brief at 21-23, citing Exh. Hull-3; Tr. 12, at 200).

Second, Hingham and Hull note that the Company's presentation of its project financing emphasizes the fact that it is currently in effect and implies that the Department cannot change the terms of the lease arrangement (Joint Intervenor Brief at 71). Hingham and Hull argue that the elements of the project financing could be modified without undermining the financing and note that the Company's own witnesses conceded this was possible (Joint Intervenor Brief at 71-72, citing Tr. 4, at 158-160; Tr. 14, at 28-30).

With respect to cost recovery, Hingham and Hull argue that the Company's combined fixed and percentage rental payments result in a greater level of cost recovery from ratepayers than is traditionally the case (Joint Intervenor Reply Brief at 2). Noting that the

D.P.U. 95-118

Page 68

anticipated service life of the WTP is 60.5 years, Hingham and Hull stated that the Facility Lease provides full cost recovery to MassCap in less than 40.5 years (id.). According to Hingham, this would allow MassCap to fully recover its investment in the WTP and charge a market-based rental rate for the remaining life of the facility (id. at 3). Based on a present value analysis of the Company's lease payments, Hingham determined that the present value of the stream of lease payments recovered 102 percent of the total asset base over the term of the Facility Lease (Exh. Hingham-3, at 4, exhs. JML-2, JML-3).

Hingham proposed that the rental payments be recalculated so that the fixed and percentage rent recovered about two-thirds of the cost of plant over the term of the Facility Lease, with an 8.89 percent pre-tax weighted cost of capital for the unrecovered plant (Exh. Hingham-3, at 4-5; Tr. 12, at 65-66). This would, according to Hingham, result in a total rental expense over the life of the Facility Lease of \$122,331,626, versus the \$160,639,000 derived under the Company's proposal (Exhs. Hingham-3, at 5, exh. JML-4; DPU-200). At the end of the Facility Lease, Hingham and Hull stated that MassCap could release the WTP at market rental rates, which would be limited to a return on the undepreciated book value (Exh. Hingham-3, at 5-6; Tr. 12, at 30-31).

According to Hingham, its proposal would not be contrary to generally accepted accounting principles, because accounting principles only provide guidance as to how a transaction should be recorded for accounting purposes (Exh. Hingham-3, at 6; Tr. 30, at 62). Hingham and Hull contend that by reallocating the fixed and percentage rent components of the lease, the Company could retain the lease as an operating lease (Joint Intervenor Reply Brief at 18; Exh. Hingham-3, at 6).

D.P.U. 95-118

Page 69

Hingham and Hull urge the Department to scrutinize the project financing carefully and reject the Company's financing arrangement if the results are unfair or burdensome to ratepayers (Joint Intervenor Brief at 71-72; Joint Intervenor Reply Brief at 20).

2. Cohasset

Cohasset contests the Company's proposal to allow the full recovery of lease expenses over a period of 40 years though the WTP has an estimated service life of 60 years (Cohasset Brief at 8). The Company argues that by paying off the construction costs over the shorter time period, AWW and MassCap will realize a "windfall" profit for the remaining 20 years of the plant's useful life (id.). This inequity, Cohasset states, is underscored by the incurrence of additional costs associated with purchasing more expensive materials intended to extend the useful life of the WTP (id.). Cohasset supports the adoption of Hingham's proposal to spread out the rental payments so that approximately two-thirds of the total plant costs are recovered over forty years (id. at 8-9).

3. Company

The Company dismisses any suggestion by the intervenors that the project finance structure was used to circumvent the Department's ability to review the financing (Company Brief at 40; Company Reply Brief at 21). Claiming that the cases relied on by

Hingham and Hull pertain to AWW Service transactions, the Company rejects the intervenors' argument that "affiliated company" tests must be applied to judge the project financing, (Company Reply Brief at 21).

The Company maintains that, contrary to the position of the intervenors, traditional financing is not a realistic method of financing the WTP (id.). Mass-Am contends that it lacks the financial resources and asset base to meet the Department's net utility plant test

D.P.U. 95-118

Page 70

(Company Reply Brief at 36, citing Tr. 5, at 82-83). The Company also argues that, given its debt coverage ratio as of July 31, 1995 of 0.58, it is unlikely that it could have issued any long-term debt to finance the plant (id. at 37, citing Exh. DPU-98).

Mass-Am contends that, in view of the substantial cost of the WTP, it thoroughly investigated all reasonable options to reduce the cost to ratepayers (Company Brief at 15). The Company points out the adverse consequences had the WTP been financed through conventional means. The Company maintains that if it owned the WTP, the plant and the revenues would have been automatically subject to the prior liens of Mass-Am's existing general mortgage indenture (Company Brief at 17). Consequently, it argues that the unencumbered first security interest required for the MDFA Bonds could not have been granted to secure the lien for the MDFA

bondholders (id.). Mass-Am also states that by using the project finance approach, it was not constrained by either the debt limit contained in its general mortgage indenture or any utility financing constraints (id. at 36-37). In support of this, the Company points to its general mortgage indentures, which prohibit long-term debt from exceeding 65 percent of capitalization (Company Reply Brief at 36, citing Exh. MA-10 at 9).

The Company argues that project financing results in lower overall costs (Company Brief at 15; Company Reply Brief at 34). Mass-Am argues that, by issuing tax-exempt debt for a debt ratio of 87 percent, MassCap's cost of capital was 7.84 percent versus the 10.0 percent it claims would have been the case under the traditional approach. The Company represents that the financing here was achieved at the lowest possible price in the market

D.P.U. 95-118

Page 71

place at the time (Company Brief at 16, 18). [42] Mass-Am contends that if traditional financing were used in this case, it would result in far greater rate increases to ratepayers in the early years of the WTP's operation and would not mitigate the costs of the plant as would project financing. (Company Reply Brief at 41). Mass-Am contends that under traditional financing, the cost of the plant would have been approximately \$518 per year per average residential customer in 1997, with a gradual decrease to \$357 in 2015 (Company Brief at 16, citing Exh. DPU-98).

The Company compares this outcome to the phasing in of costs produced by project financing over the term of the Facility Lease, which it argues results in an average residential rate impact of \$269.54 in 1997, rising to a maximum of \$456.00 in the last year of the Facility Lease (Company Brief at 16, citing Exh. DPU-98; Tr. 4 at 100-101). Mass-Am concludes that project financing dramatically

reduces rate shock to customers that would otherwise occur if the plant were financed traditionally (Company Reply Brief at 35).

With respect to the selected return on equity for MassCap, the Company maintains that this rate is just and reasonable based on market conditions, the credit behind the Facility Lease payments, the potential variability in the equity return, and the construction risk that MassCap and AWW are assuming under the project financing (Company Brief at 18). However, the Company also notes that a return on equity for MassCap between 14 and 16 percent would be reasonable (Tr. 4, at 158). Mass-Am adds that its proposed return represents the low end of the range of equity returns typical for project financing, which it

[42] According to the Company, the yield on taxable bonds maturing in 2035 would have been approximately 9.35 percent, whereas the yield for bonds due in 2035 was 6.95 percent under the project financing approach (Company Brief, at 18, citing Exhs. MA-9, at 4; MA-10, at 28).

D.P.U. 95-118

Page 72

asserts ranges from the high teens to 30 percent on an after-tax basis (Company Reply Brief at 39-40).

Regarding the intervenors' proposed modifications to the lease structure to spread the payments over the life of the WTP, Mass-Am argues that their proposals have a number of serious flaws which, if adopted, would result in greater revenue requirements for the Company over the first 10.5 years of the Facility Lease (Company Brief at 28-29). Mass-Am also argues that the intervenors' criticism of the limited options open to the Company at the end of

the lease ignores the fact that these provisions are required by FASB in order to account for the Facility Lease as an operating lease (Company Brief at 30; Company Reply Brief at 38-39).

According to the Company, the intervenors seek to frontload revenue requirements, which would produce a rate increase in 1997 that is 24 percent higher than would result under the Company's proposal (Company Reply Brief at 38, citing Exh. MA-202, at 4). According to the Company, the lease payments were intentionally structured so that they would be lower in the early years to meet the dual goals of mitigation of rate shock and provision of an adequate return for MassCap (Exh. DPU-94). Mass-Am argues that if the percentage rent had been structured on a level basis, as Hingham and Hull proposed, this would not accomplish the objective of minimizing early year rent payments though the gross rent payment would have been significantly lower (Exh. MA-203, at 4).

Furthermore, the Company contends that if the Department sets rates over the life of the WTP, there would be insufficient revenues to cover the lease payments (Company Brief at 29). The Company argues that under the intervenors' proposal, the Company would exceed its total rent expense in the first 10.5 years of the lease by an aggregate of \$5.0

D.P.U. 95-118

Page 73

million, but would receive \$50.3 million less over the remaining 30

years of the lease, thus experiencing a net revenue shortfall of \$45.3 million (id. at 38, citing Exh. MA-202 at 4-5). Furthermore, Mass-Am contends that the intervenors' proposal to set rates over the life of the WTP would result in treatment of the Facility Lease as a capital lease, which would have disastrous financial implications for the Company (Company Brief at 29). The Company argues that the intervenors ignored a number of factors affecting the feasibility of their proposal, as evidenced by their lack of knowledge of Mass-Am's indenture requirements, the ability of the Company to meet the Department's net plant test for traditional financings, and their lack of analysis into the effects of their proposal on the eligibility for MDFA Bonds (id. at 30).

C. Standard of Review

The Department favors approaches to financing facilities that mitigate rate shock. The propriety and usefulness of a financing arrangement is specific to each situation and must be examined individually based on the specific circumstances presented. Harbor Electric Energy Company, D.P.U. 89-220, at 9 (1990).

The function of the Department is the protection of public interests and not the promotion of private interests. *Lowell Gas Light Company v. Department of Public Utilities*, 319 Mass. 46, 52 (1946). It is the goal of the Department's statutes and regulations to ensure to the public the availability of service at reasonable cost from private industry protected from the risk of competition. *Commonwealth Electric Company v. Department of Public Utilities*, 347 Mass. 351, 369 (1986). To such extent, the Department can review transactions made by and or behalf of regulated entities to ensure that ratepayer interests are not jeopardized. See *Commonwealth Electric Company v. Department of Public*

D.P.U. 95-118

Page 74

Utilities, 397 Mass. 361, 379 (1986) (though the Department does not have authority to inquire into the reasonableness of wholesale rates fixed by FERC, the Department may inquire whether a purchaser is warranted in agreeing to purchase at such a rate considering its alternatives); *Pike County Light and Power Company -- Electric Division v. Pennsylvania Public Utilities Commission*, 465 A.2d 735, 738 (1983) (Public Utilities Commission has authority to review effect of wholesale transaction on retail company's cost of service and comparison with alternative costs of purchased power and review does not offend FERC jurisdiction).

The Department also has authority to inquire into affiliated transactions with affiliated companies under G.L. c. 165, s. 4 and c. 164, s. 85. [43] See D.P.U. 85-270, at 184. Transactions with affiliates will be subject to a greater level of scrutiny than would be the case if the utility dealt with all parties at arms' length. See D.P.U. 88-170, at 21; *Kings Grant Water Company*, D.P.U. 87-228, at 7 (1988); D.P.U. 86-93, at 18.

[43] Under G.L. c. 164, s. 85, the Department is authorized to examine the books, contracts, records, documents and memoranda or the physical property of any affiliated company with respect to any relations, transactions or dealings, direct or indirect, between such affiliated company and any company so subject. The word 'affiliated

company' shall include any corporation, society, trust, association, partnership, or individual (a) controlling a company subject to this chapter, either directly, by ownership of a majority of its voting stock or of such minority thereof as to give it substantial control of such company, or indirectly, by ownership of such a majority or minority of the voting stock of another corporation or association so controlling such company; or (b) so controlled by a corporation, society, trust, association partnership or individual controlling as aforesaid, directly or indirectly, a company subject to this chapter; or (c) standing in such a relation to a company subject to this chapter that there is an absence of equal bargaining power between the corporation, society, trust, association, partnership or individual

and the company so subject, in respect to their dealings and transactions.

D.P.U. 95-118

Page 75

The first issue to be addressed in a Department review of financings is whether the proposed financing is reasonably necessary to accomplish some legitimate purpose in meeting a company's service obligations, pursuant to G.L. c. 164, s. 14. [44,45] Fitchburg Gas & Electric Light Company v. Department of Public Utilities, 395 Mass. 836, 842 (1985) ("Fitchburg II"), citing, Fitchburg Gas & Electric Company v. Department of Public Utilities, 394 Mass. 671, 678 (1985) ("Fitchburg I"). The courts have found that, for the purposes of G.L. c. 164, s. 14, "reasonably necessary" means "reasonably necessary for the accomplishment of some purpose having to do with the obligations of the company to the public and its ability to carry out those obligations with the greatest possible efficiency." Fitchburg II at 842, citing Lowell Gas Light Co. v. Department of Public Utilities, 319 Mass. 46, 52 (1946). The Fitchburg I, Fitchburg II, and Lowell Gas cases also established that the burden of proving that an issuance is reasonably necessary rests with the company proposing the issuance, and that the Department's authority to review a proposed issuance "is not limited to a 'perfunctory review.'" Fitchburg I at 678; Fitchburg at 842; Lowell Gas at 52.

[44] Under a traditional financing, the Department must also determine whether the Company has met the net plant test. Milford Water Company, D.P.U. 91-257, at 4-5 (1992); Edgartown Water Company, D.P.U. 90-274, at 5-7 (1990); Barnstable Water Company, D.P.U. 90-273, at 6-7 (1990); Colonial Gas Company, D.P.U. 84-96 (1984). Regarding the net plant test, a company is required to present evidence showing that its net utility plant (original cost of capitalizable plant, less accumulated depreciation) equals or exceeds its total capitalization (the sum of its long-term debt and its preferred and common stock outstanding, exclusive of retained earnings) and will continue to do so following the proposed issuance. D.P.U. 84-96, at 5.

[45] The provisions of G.L. c. 164, s. 14 are applicable to water companies pursuant to G.L. c. 165, s. 2.

D.P.U. 95-118

Page 76

The Department next considers whether the financing scheme is in the public interest. The Department must determine whether the proposed financing approach is a prudent, reasonable, and acceptable financing method. In doing this, the Department must look at the various financing alternatives available, including alternative corporate structures, and the benefits and cost savings associated with each mechanism. See Harbor Electric Energy Company, D.P.U. 92-244 (1993); Harbor Electric Energy Company, D.P.U. 90-288 (1991); D.P.U. 89-220. The Department has acknowledged that there are cost savings associated with the issuance of tax-exempt debt.

See New England Electric System/Nantucket Electric Company, D.P.U. 95-67, at 10-11 (1995). Generally, the lowest overall cost method of financing mitigates rate impact on the ratepayer. There is no fixed rule of a required debt/equity mixture; each circumstance is different and the Department must consider each financing and the attendant circumstances on a case-by-case basis.

D. Analysis and Findings

In the present case, the record demonstrates that the project financing is reasonably necessary to accomplish a legitimate purpose in meeting Mass-Am's service obligations to the public, i.e, to provide a supply of potable water to its customers in accordance with state and federal requirements. The DEP mandated that the Company comply with the SWTR and that it prepare for potential, increased requirements under the ESWTR. Even in the absence of state or federal requirements, Mass-Am has an on-going obligation to address the long-standing quality problems experienced by its ratepayers.

Under G.L. c. 164, s. 85(a), AWW is an affiliated company as it controls Mass-Am by owning a majority of Mass-Am's stock.[46] As such, the Department has authority to

[46] AWW also controls Mass-Am by virtue of its ownership of GWS.

D.P.U. 95-118

Page 77

scrutinize closely transactions between AWW and Mass-Am. In the instant financing, the affiliate company, AWW infused \$5.6 million in equity to create MassCap, a special purpose corporation. MassCap, which leases the WTP to Mass-Am, receives rental payments derived from Mass-Am's ratepayers. The Department's function is the protection of ratepayers' interests and not private interests. As such, the Department has the responsibility to review the transactions underlying the project financing, including MassCap's return on equity, to assess if the financing arrangement jeopardizes ratepayers' interests.

The Department finds no evidence that the transactions between Mass-Am, MassCap, and AWW were structured to jeopardize ratepayers' interests and to benefit only the shareholders. The record evidence demonstrates that the instant project financing was created to facilitate the construction of the WTP at a lower overall cost, thus benefiting ratepayers.[47] Through the creation of Mass-Cap, Mass-Am was not hampered by any restrictions on its own capital and mortgage indenture structure or by traditional utility financing restrictions and could secure the maximum leverage allowed by the marketplace, as evidenced by its use of an 87:13 debt/equity ratio

versus the maximum allowable 65:35 debt/equity ratio available to Mass-Am under its indentures. Through the use of increased debt and the tax-exempt status associated with debt issued under the aegis of the MDFA, Mass-Am was able to decrease the cost impact on the ratepayer by approximately \$18.7

[47] Had the Company financed and constructed the WTP under traditional utility financing, the annual revenue increase necessary to support a \$40 million WTP, including depreciation, return, income taxes, and operating costs, would have been approximately \$7 million. This compares to the approximately \$4.2 million sought by Mass-Am.

D.P.U. 95-118

Page 78

million over the term of the Facility Lease.[48] The Department notes that this approach, when available, provides substantial savings over traditional financing. D.P.U. 95-67, at 13.

The Department commends Mass-Am for its creativity in structuring the instant, project financing which, compared to a traditional debt-equity financing, provides for lower rates and thus mitigates rate impact. The Department seeks to encourage and to reward innovation which provides benefits to ratepayers and is in the public interest. Although the Company contends that a 15 percent return on equity is at the low end of returns for project financings, the Department notes that the instant project financing is the first nationally for a regulated water utility and that the project financings referenced by the Company are mostly related to unregulated entities. The Department also notes that the Company stated that a reasonable rate of return for MassCap is not preset or formulaic and is subject to some level of discretion although the financing arrangement is preset and already in place. Based on the record evidence and on the fact that the financing arrangement is an innovative one that provides immediate benefits to ratepayers, the Department finds that a 14 percent return on equity to MassCap reflects an appropriate reward for innovation commensurate with MassCap's risk. As the instant project financing provides cost savings to ratepayers, it is in the public interest.

Regarding Hingham's and Hull's proposal to spread the rent payments over the life of the WTP, the Department finds the Company's Facility Lease, which spreads the rent

[48] This is based on the Company's overall cost of capital of 10.25 percent, adjusted to reflect a pre-tax cost of capital of 13.71 percent (5.58 percent weighted cost of equity / .6171) + 4.67 percent weighted cost of debt). By substituting this rate for the 8.89 percent pre-tax cost of capital used in Exhibit Hingham-3, exh. JML-4, the total payments that would be required under traditional utility financing would be approximately \$174,307,000, versus the \$160,639,000 resulting under the Company's project financing.

D.P.U. 95-118

Page 79

payments over 40.5 years, to be in the public interest. The structure and treatment of the Facility Lease as an operating lease provides benefits and cost savings to the ratepayer. Specifically, an operating lease averts the Company from recording the WTP as an asset and recording the associated debt as a corresponding liability, thereby allowing the Company to continue to meet its current indenture requirements. The record clearly demonstrates that if the WTP were treated as a capital lease on the Company's books, Mass-Am's debt would no longer meet the indenture requirements, thereby resulting in major, adverse financial repercussions to the Company to the point where continued reliability of service to Mass-Am's ratepayers could be jeopardized. Hingham and Hull have not affirmatively demonstrated that their proposed modifications to spread the surcharge over the lifetime of the WTP would allow the Company to continue recording the Facility Lease as an operating lease. Accordingly, the Department finds the Company's Facility Lease which provides for the rent payments over 40.5 years to be in the public interest. In making this finding, the Department rejects Hingham's and Hull's proposed modifications to apply the surcharge over the life of the WTP.

Based on the foregoing, the Department finds that the specific project financing with a 14 percent return on equity and a surcharge applied over 40.5 years is a reasonable and acceptable approach for constructing and financing the Company's WTP and is in the public interest.

D.P.U. 95-118

Page 80

IV. REVENUES

A. Merchandising and Jobbing Revenues

1. Company Proposal

During the test year, Mass-Am booked \$112,761 in merchandising and jobbing ("M&J") revenue (Exh. MA-7, at 8). This included a negative \$214 booked to Account 560, M&J revenue, and \$112,973 booked to Account 566, Miscellaneous Non-Operating Income (1994 Annual Return, at 301). [49] According to the Company, when a customer requests that Mass-Am perform a particular service, such as resolving a service line problem, the Company books the cost of the project to an "H-work order" (Exh. MA-133; Tr. 9, at 94, 121). Once the work is completed, the charges are cleared from the H-work order and transferred to M&J expense, with the customer being invoiced for the service (Exh. MA-133; Tr. 9, at 121). After payment is received from the customer, M&J expense is credited, and the expense is booked to the Company's various labor accounts (Tr. 9, at 121-122).

The Company indicated that of its total reported M&J revenue, \$109,780 was attributable to realized contributions in aid of construction taxes on expired extension deposit advances, \$2,972 represents net write-offs/additions to miscellaneous invoices, and \$9 represents the net aggregate H-work orders (Exh. MA-133). Included in the Company's H-work orders are costs that are recovered through customer-specific service fees (id.). Mass-Am has proposed to revise its service fee levels and accounting treatment as described in Section IV.B, below.

[49] For purposes of this proceeding, Mass-Am identified both Account 560 and 566 revenues as M&J-related (Exh. MA-7, at 8).

D.P.U. 95-118

Page 81

2. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull contend that even though the Company acknowledged that the entire balance of its M&J revenue should be reflected in operating income, Mass-Am has only proposed to include approximately \$34,000 of its M&J income as operating revenues (Joint Intervenor Brief at 27). Hingham and Hull argue that the Company was unable to offer any explanation as to the remaining balance (*id.*). Hingham and Hull therefore argue that the Company's reported M&J revenue should be increased by an additional \$78,000 (*id.*).

b. Company

The Company contends that it has properly accounted for its M&J revenue on the income statement (Company Brief at 48; Company Reply Brief at 19). Mass-Am asserts that since income for ratemaking purposes is calculated using rate base and the overall weighted return on capital, there is no basis for any further revenue adjustment as proposed by Hingham and Hull (Company Brief at 48-49; Company Reply Brief at 19).

3. Analysis and Findings

The record in this case demonstrates that the overwhelming bulk or the \$112,761 booked to Account 566 represent the Company's CIAC tax liability arising from the Tax Reform Act of 1986 (Exh. MA-133). The Department finds that Mass-Am has properly accounted for its Account 560 and Account 566 revenues. Accordingly, the Department declines to adopt Hingham and Hull's proposal. To the extent that the Company's M&J revenue includes H-work orders associated with fees imposed on customers, the Department shall address them in Section IV.B, below.

D.P.U. 95-118

Page 82

B. Service Fee Increases

1. Company Proposal

During the test year, the Company booked \$22,860 in revenues associated with various fees imposed on customers, including after-hour callouts and reconnection fees (Exh. MA-7, at 36). Of this amount, the Company booked \$300 to Account 507, Miscellaneous Operating Revenues, and booked the remaining \$22,560 to miscellaneous income (*id.*). Mass-Am treats Account 507 income as above-the-line for ratemaking purposes, while miscellaneous income is considered below-the-line for ratemaking purposes (*id.*).

Mass-Am has proposed an increase to other operating revenues of \$34,127 (*id.*). This represents: (1) an increase of \$22,560 associated with the Company's proposal to record all of its miscellaneous income to Account 507; and (2) an increase of \$11,567 associated with proposed increases in certain customer-specific

fees imposed by Mass-Am (Exh. MA-6, at 21; MA-7, at 36).

Included in its proposed general fee increases is a requested increase in the Company's 1-inch and smaller meter test fee from \$5 to \$25, and its 1-inch and larger meter test fees from \$5 to \$35 (Exh. MA-7, at 36). Mass-Am has proposed increases in its fees from

\$5 and \$7.50 to \$15 for non-payment reconnection during business hours and increase its non-payment reconnection after business hours fees from a range of \$165 to \$221 to a standard fee of \$195 per call (id.). The Company also proposed to replace its after hours callout fee from the current range of \$165 to \$221 with a standard fee of \$195 (id.). The Company has also proposed to institute a new return check fee of \$20, as well as a new business hours turn-on fee of \$15, and decrease its additional cross-connection device testing

D.P.U. 95-118

Page 83

fee from \$40 to \$25 (id.). According to the Company, the proposed fee increases are intended to be more reflective of the cost associated with providing these particular services and ensure that customers who impose these particular costs will be held responsible for them (Exh. MA-76). Mass-Am indicated that its proposed after hours non-payment reconnection fee and after-hours call charge reflected the minimum callout provisions contained in its most recent union contracts, which provide for both overtime pay and minimum hours (id.; Exh. MA-58).

2. Positions of the Parties

The Company contends that it has appropriately requested above-the-line treatment for the full \$22,860 in test year revenues associated with customer fees (Company Brief at 48; Company Reply Brief at 19). The Company argues that its proposed fee increases are designed to ensure that customers receiving a specific service or imposing a specific cost on the Company will be responsible for that cost (Company Brief at 48).

3. Analysis and Findings

With respect to the Company's Account 507 revenues, the Department finds that these constitute normal operating functions for a water utility, and thus should be treated as sort of Mass-Am's operating income. Barnstable Water Company, D.P.U. 482, at 7 (1981); Edgartown Water Company, D.P.U. 61, at 5-6 (1980). The Department further finds that the Company's H-work orders currently booked to Account 566 represent costs associated with day-to-day operations, and thus should be treated above-the-line as well. Accordingly, the Department accepts the Company's proposal to move its fee-based revenues above-the-line for ratemaking purposes.

D.P.U. 95-118

Page 84

With respect to the fee increases proposed by Mass-Am, the Department has reviewed the Company's calculations and assumptions. The Department finds that the proposed meter test fees, return check fees, business hours turn-on fees, non-payment reconnection fee during business hours, and cross-connection testing fees reflect the cost of providing the particular services, and are

therefore reasonable. Whitinsville Water Company, D.P.U. 89-67, at 4-5 (1989). Turning to the Company's proposed non-payment reconnection after business hours and after hours callout fees, the Department finds that they fairly represent the additional costs incurred by the Company for these services, and are therefore reasonable. Additionally, the Department finds that the standardization of these fees would reduce customer confusion and facilitate an efficient response to customer inquiries. Accordingly, the Department approves the Company's proposed service

fees. Mass-Am is hereby directed to file, as part of its compliance filing, revised terms and conditions which conform to the Department's Order. Additionally, the Company is hereby directed to inform its customers of the new service rates.

V. RATE BASE

A. Post-Test Year Additions

1. Introduction

At the end of the test year, the Company's net plant in service was \$16,755,042 (Exh. MA-7, at 33). Mass-Am has proposed the inclusion of \$4,518,000 in post-test year plant additions, including: (1) \$430,000 for a roof replacement at the Burbank Reservoir in Millbury ("Burbank Project"); (2) \$380,000 in improvements made at the Accord pumping station; (3) \$3,358,000 in off-site piping related to the WTP; and (4) \$350,000 relative to

D.P.U. 95-118

Page 85

modifications at Fulling Mill pumping station (Exh. MA-7, at 33 (rev.)). [50]

The Burbank Reservoir, first constructed in 1894, is an unlined, in-ground granite block structure 150 feet in diameter with a wooden roof (Exh. MA-54). According to the Company, the structure, and in particular the roof, has deteriorated over the years (id.). Mass-Am stated that the DEP has requested that the roof be replaced because of the possibility of outside contamination (id.). As part of the Burbank Project, the Company intends to make a number of improvements and repairs (id.). Mass-Am anticipates that this project will be completed by June 30, 1996 (id.; RR-DPU-29).

2. Positions of the Parties

Mass-Am asserts that the Burbank Project, along with the Accord pumping station, Fulling Mill pumping station, and off-site piping projects will be completed and in service by the date of the Department's Order or shortly thereafter (Company Brief at 46). The Company contends that taken in the aggregate, its post-test year additions represent approximately 35 percent of its year-end rate base and thus represent significant additions to rate base that would qualify for inclusion in cost of service (id. at 46-47, citing Assabet Water Company, D.P.U. 95-92, at 6 (1996)).

3. Analysis and Findings

For ratemaking purposes, the Department determines rate base according to the cost of the utility's plant in service as of the end of the test year under a used and useful standard. In order to qualify for inclusion in rates, a utility's plant investment must be in service and providing benefits to customers. D.P.U. 85-270,

at 60. With respect to plant

[50] The Department has already addressed the ratemaking treatment of Accord Pond, Fulling, Mill, and off-site piping in Section II.F.3, above. Accordingly, the Department shall confine this section of the Order to the Burbank Project.

D.P.U. 95-118

Page 86

installed after the end of the test year, it is the Department's policy not to adjust test year-end rate base, unless the utility demonstrates that the addition represents a significant investment

which has a substantial impact on a company's rate base. D.P.U. 1700, at 5-6; Salisbury Water Supply Company, D.P.U. 1608, at 4 (1984); D.P.U. 1122, at 19.

The issue presented by the proposed adjustment is whether the Burbank Project represents a significant addition to test year-end rate base, thus warranting an exception to the Department's general policy on post-test year rate base additions. D.P.U. 1700, at 6; D.P.U. 1608, at 4. The record demonstrates that this project component will not be completed until about one month after this Order is issued. Moreover, the Department finds that the Burbank Project does not represent a significant addition to year-end rate base. Accordingly, the Department shall reduce the Company's proposed rate base by \$430,000.

As noted in Section II.F.3, above, the Department has excluded from rate base \$350,000 representing the modifications being made to the Fulling Mill pumping station. Therefore, the Department finds that the Company's rate base shall be reduced by a total of \$780,000. A corresponding reduction of \$5,904 in property tax expense is required as well. Corresponding adjustments to depreciation expense and deferring income taxes are also required, and addressed below in the respective sections of this Order.

B. Computer System

1. Introduction

During the test year, the offices of Connecticut-American Water Company ("Conn-Am"), an affiliate of Mass-Am, were relocated to a smaller location (Exh. MA-54). As part of the relocation, Conn-Am's AS/400 computer system, used by all of AWW's subsidiaries in Massachusetts, Connecticut, New Hampshire, and New York ("New England

D.P.U. 95-118

Page 87

Region") for accounting and customer service functions, was moved to the offices of Mass-Am, at a total cost of \$57,644 (id.; Tr. 9, at 5-7). As part of this project, the Company was required to incur expenditures for modifications to its air conditioning and fire protection systems, as well as provide for appropriate electrical service (Exh. MA-54).

2. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull contend that although the Company's computer system is intended to serve all of AWW's operating companies in its New England Region, Mass-Am is seeking to recover solely from its ratepayers approximately \$60,000 in moving expenses associated with the computer system's relocation (Joint Intervenor Brief at 5-6). Hingham and Hull argue that contrary to the Company's representations, the record demonstrates that the computer system was moved from Connecticut to Hingham as part of AWW's overall merger proposal (id. at 6).

Hingham and Hull also question the need for the computer (id. at 7). They state that given its intended use for the New England Region as a whole, the computer is oversized to meet the needs of Mass-Am's ratepayers and does not represent a cost-effective benefit to customers (id.).

b. Company

Mass-Am states that the 1994 computer relocation was capitalized rather than expensed as claimed by the intervenors (Company Reply Brief at 4). The Company contends that if it were

required to allocate a portion of the capital costs of its computer system to its affiliates, an additional adjustment would be required to allocate similar capital costs related to the customer service functions provided to the Company by its affiliates (id. at 4-5).

D.P.U. 95-118

Page 88

Mass-Am maintains that the necessary information to make the adjustment requested by Hingham and Hull is not in the record (id. at 5).

Furthermore, the Company contends that its computer system allows Mass-Am to achieve economies of scale in accounting and service functions, as well as respond rapidly to customer inquiries (id.). Therefore, Mass-Am concludes, the computer system should remain in rate base (id.).

3. Analysis and Findings

The Department has stated that the operating expenses of companies engaged in affiliate transactions will be subject to a -greater level of scrutiny than would be the case if the utility dealt with all parties at arms' length. D.P.U. 88-170, at 21, D.P.U. 85-137, at 49-52; D.P.U. 1590, at 15. While the Company's use of the computer system may provide economies of scale in its operations, the fact remains that the system is used by all of AWW's operating companies in the New England Region. Accordingly, the Department finds that an allocation between Mass-Am and its affiliates is appropriate.

The Department has previously required the use of labor allocators to allocate shared data processing plant between affiliates. Berkshire Gas Company, D.P.U. 90-121, at 4647 (1990). Because the record does not provide the necessary level of detail required to allocate the Company's computer equipment on the basis of labor allocators, the Department finds that an alternative approach is warranted in this case. While the Department is concerned that the current allocation method used to apportion AWW Service charges among AWW's operating companies in the New England

Region may not accurately reflect the cost causation of AWW's operating companies (see Section VI.B.3, below), the record evidence supports the use of Mass-Am's allocated share of 26.12 percent for AWW Service charges as a

D.P.U. 95-118

Page 89

reasonable allocation method for purposes of this proceeding. Based on the capitalized computer costs of \$57,644 and allocation factor of 26.12 percent, the Department finds that the Company's respective share of the capitalized additions is \$15,057. Accordingly, the Company's proposed rate base shall be reduced by \$42,587. We hereby direct the Company to address the issue of interstate allocation as part of either the pending merger case or in its next rate proceeding, whichever is proceeded with first.

VI. EXPENSES

A. Employee Compensation Expense

1. Payroll Expense

During the test year, Mass-Am booked \$1,465,071 to payroll expense (Exh. MA-7, at 11). The Company has a total of 41 employees, of whom 29 are union and 12 are nonunion (id.). The Company reported that eight employees in the offices of New

York-American Water Company ("NY-Am"), as well as a number of employees of Conn-Am, provided services to Mass-Am (Tr. 9, at 24, 34). Further, Mass-Am stated that a number of its employees also performed certain accounting services for Conn-Am (id., at 34-35). The Company did not charge any of these costs associated with NY-Am or Conn-Am to either of these companies, nor was it billed for any of the services NY-Am and Conn-Am provide to Mass-Am (id., at 23-24, 35).

The Company has proposed an increase to payroll expense for union and nonunion employees of \$67,758 to reflect increases scheduled to take effect through December 1, 1996 (Exh. MA-7, at 11). Mass-Am's proposed adjustments reflect the inclusion of scheduled increases under contracts with its two unions, Locals 2936 and 13492 of the United Steelworkers of America, of 3.0 percent and 2.9 percent, respectively (Exh. MA-58). With

D.P.U. 95-118

Page 90

respect to its nonunion employees, Mass-Am explained that its salary administration program is administered by AWW (Tr. 8, at 52). The Company stated that among the criteria used in its salary administration are the results of an annual survey of investor-owned water utilities' compensation and benefit packages prepared by SAJE Consulting Group ("SAJE Report") (Exh. MA-60; Tr. 8, at 52). The Company has incorporated into its proposed payroll expense an increase for nonunion employees of 3.0 percent (Exh. MA-6, at 9-10).

2. Group Insurance Expense

During the test year, Mass-Am booked \$198,558 to group insurance expense based on actual premiums charged for the coverage (Exh. MA-7, at 12). The Company offers three health and accident

packages for its employees, including Basic Major Medical, Comprehensive Major Medical, and Managed Choice (id.). The Company has increased the required employee contribution rate for health care premiums from an average of 5.59 percent during the test year to the current level of 15 percent, depending upon the particular coverage selected by an employee (Exh. MA-63; Tr. 9, at 91-92). Mass-Am stated that it began requiring contributions from its employees about three years ago (Tr. 9, at 92). In addition, Mass-Am offers basic life and disability insurance (Exh. MA-7, at 12 (rev.)). The Company proposed an increase of 417,857 to its group insurance expense to reflect revised medical insurance premiums that took effect on February 1, 1996, as well as the increase in life and disability insurance expense arising from Mass-Am's increased payroll expense (id.).

3. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull maintain that employees of Mass-Am provide services to other AWW affiliates outside the Company's territory (Joint Intervenor Brief at 10, citing Tr. 9,

D.P.U. 95-118

Page 91

at 35). Therefore, Hingham and Hull urge the Department to direct the Company to apply a suitable allocator for these salaries and adjust Mass-Am's cost of service appropriately (id.).

With respect to the Company's group insurance expense, Hingham and Hull note that the test-year level for this expense was

significantly higher than in either 1993 or 1995 (Joint Intervenor Brief at 26, citing Exh. MA-118). They argue that unless the Company has thoroughly documented the reasons for this increase, the test year expense should be adjusted to reflect a more representative expense level (id. at 26-27).

b. Company

Mass-Am argues that it meets the Department's standards for ratemaking treatment of its wage and salary increases (Company Brief at 51). The Company contends that its union pay increases are based on signed contracts that provide for 3.0 and 2.9 percent pay increases (id. at 50, citing Exh. MA-58). With respect to its nonunion employees, Mass-Am maintains that it meets the Department's standards by expressly committing to granting a 3.0 percent increase (id.).

In support of its proposed adjustments, Mass-Am notes that the AWW participates in the SAJE Report[51] and suggests that its prevailing pay packages compare favorably to the higher wage levels it asserts exist in New England (id.). While the Company recognizes the Department's standards on employee compensation as set forth in Massachusetts Electric Company, D.P.U. 95-40 (1995), it believes the Department did not intend utilities the size of Mass-Am to prepare the same level of comparative analysis as would be required of a large utility (id.).

[51] According to Mass-Am, its salaries and wages tend to be on the low end of the national range reported in the SAJE Report (Company Brief at 50).

D.P.U. 95-118

Page 92

According to the Company, it has worked in conjunction with AWW to control health care costs (Exh. MA-62). As part of this effort, Mass-Am stated that its benefits package contains a range of health care cost control features, and that it was able to introduce a managed care program in its most recent union agreements (id.).

With respect to the intervenors' proposal to allocate a certain portion of payroll expense to other AWW affiliates, the Company argues that because certain employees of Conn-Am and NY-Am also provide services for the Company, a similar allocation of these employees to Mass-Am would be required (Company Reply Brief at 8). Mass-Am argues that the intervenors have not demonstrated the net benefit to customers in Massachusetts from their proposal and that the record does not provide a basis for such an allocation (id. at 8-9).

4. Analysis and Findings

a. Union Payroll

The Department's standard for union payroll adjustments requires: (1) that the proposed increases take effect before the midpoint of the twelve months following the date of an Order; (2) that the proposed increase be known and measurable, i.e., based on signed contracts between the unions and the company; and (3) that the proposed increases be demonstrated as reasonable. D.P.U. 95-40, a. 20; Massachusetts Electric Company, D.P.U. 92-78, at 19-20 (1992); D.P.U. 1122, at 26.

The record demonstrates that the Company's proposed union

adjustments include only those increases that will be granted prior to December 1, 1996, the midpoint of the twelve months following the date of this Order. Accordingly, the Department finds that Mass-Am has satisfied the first requirement listed above. With respect to the second requirement, the Department notes that the union increases are based on signed union contracts. As such, the

D.P.U. 95-118

Page 93

Department finds that the proposed increases are known and measurable and, thus, the Company has satisfied the second requirement. We address the reasonableness of the Company's union payroll expense in Section VI.A.4.d, below.

b. Nonunion Payroll

In deciding the propriety of prospective nonunion payroll adjustments, the Department applies a three-part standard. To meet this standard, a company has the burden of demonstrating: (1) an express commitment by management to grant the increase; (2) an historical correlation between union and nonunion raises; and (3) an amount of increase that is reasonable. Fitchburg Gas and Electric Light Company, D.P.U.; 1270/1414, at 14 (1983).

Regarding the first requirement, the Company has demonstrated its commitment to implementing a 3.0 percent increase for nonunion employees. Accordingly, the Department finds that an express commitment has been demonstrated. Regarding the second requirement, the Company submitted a five-year comparison of its union and nonunion increases (Exh. MA-57). The Department finds that this comparison provides sufficient demonstration of the historical correlation between union and nonunion annual increases.

We address the reasonableness of the Company's nonunion payroll expense in Section VI.A.4.d, below.

c. Group Insurance Expense

The Department requires that test year health care expenses and post-test year adjustments be (1) known and measurable, and a) reasonable in amount. D.P.U. 92-78, at 29-30 (1992); North Attleboro Gas Company, D.P.U. 86-86, at 8 (1986). In addition, the Department requires that utilities contain their health care costs. D.P.U. 92-78, at 29; Nantucket Electric Company, D.P.U. 91-106/138, at 53 (1991).

D.P.U. 95-118

Page 94

The Company's test-year health care costs are based on actual premiums charged for the coverage (Exh. MA-6, at 10). Accordingly, the Department finds that the test-year expense level is known and measurable. In reference to the intervenors' comments about the relatively high group insurance expense recorded during the test year, the Department finds that the Company has appropriately reflected the decreases to test year group insurance expense in its revised accounting exhibits. Accordingly, the Department finds that Mass-Am appropriately reflected the reduced expense in the cost of service. The Department also finds that Mass-Am further demonstrated that it has begun to make efforts to contain health care costs, as represented by its recent policy of requiring employees to pay a portion of their health care coverage, and its introduction of managed care options. Accordingly, the Department finds that the adjustments to test-year health care expenses meet the first requirement of our standard.

We address the reasonableness of the Company's proposal in Section VI.A.4.d, below.

d. Reasonableness of Employee Compensation Expenses

The Department has previously stated that, in determining the reasonableness of a company's employee compensation levels, it will review the company's overall employee compensation expenses to ensure that its employee compensation decisions result in a minimization of unit-labor costs. D.P.U. 95-40, at 26; Cambridge Electric Light Company, D.P.U. 92-250, at 55 (1992). This approach recognizes that the different components of compensation (i.e., wages and benefits) are, to some extent, substitutes for one another, and that different combinations of these component may be used to attract and retain employees. Id.

D.P.U. 95-118

Page 95

To enable the Department to determine the reasonableness of a company's total employee compensation expenses, companies are required to provide comparative analyses of their employee compensation expenses. Id. Both current total compensation expense levels and proposed increases should be examined in relation to other New England investor-owned utilities and to companies in a utility's service territory which compete for similarly-skilled employees. Id. In addition, to the extent possible, companies are required to provide productivity comparisons (i.e., output per worker-hour or a similar index). Id. This enables the Department to evaluate whether a higher cost compensation package is associated with correspondingly higher productivity and value. Id. If this association exists, the resulting unit-labor costs may be minimized, notwithstanding higher compensation, thus benefiting ratepayers. Id.

While Mass-Am did not present comparative analyses of its own regarding overall employee compensation or unit-labor costs, it did provide the results of the SAJE Report. The Department notes that, in view of the number and small size of most investor-owned water systems, as well as the limitations in data resulting from the small number of publicly traded systems, it is not appropriate for Mass-Am to generate the same level of analysis required of larger utilities. See D.P.U. 92-101, at 30. The Department finds that the SAJE Report provides a sufficient demonstration that the Company's employee compensation levels are reasonable. Accordingly, the Department finds that the Company has demonstrated the reasonableness of its employee compensation levels.

Regarding the issue of employees performing services on behalf of other AWW affiliates, the only record evidence in this proceeding concerning this issue is the fact that Conn-Am, NY-Am, and Mass-Am have some employees who devote a portion of their time

D.P.U. 95-118

Page 96

to AWW affiliates other than their own companies. There is no evidence in the record that would assist in identifying the number of employees involved in work performed on behalf of other AWW affiliates or what would constitute a reasonable allocation of their payroll expense. Furthermore, we note that a number of Com-Am and NY-Am employees provide services to Mass-Am at no charge (Tr. 9, at 24, 34). Therefore, the Department rejects Hingham and Hull's recommendation to allocate the Company's payroll expense between

Mass-Am and other AWW subsidiaries.

In doing so, the Department is in no way approving the Company's allocation of payroll between itself and its affiliates. We hereby direct the Company to address the issue of interstate allocation as part of either the pending merger case or in its next rate proceeding, whichever occurs first.

Based on the foregoing, the Department finds that the Company has justified its proposed employee compensation levels. Accordingly, the Company's proposed payroll increases shall be included in cost of service.

B. AWW Service Charges

1. Introduction

Prior to 1993, AWW's operating companies based in Massachusetts and New Hampshire had not been provided with access to AWW Service for a number of years (Tr. 8, at 48). AWW's operating companies in Connecticut and New York received services through AWW Service's eastern regional office based in Haddon Heights, New Jersey (id.). Mass-Am and other operating companies based in New England received a limited number of services, including accounting, tax, and risk management functions, through another AWW

D.P.U. 95-118

Page 97

affiliate, American Commonwealth Management Services ("ACMS") (Tr. 9, at 38). [52] Other services were provided to the Company through personnel located at other AWW operating affiliates in Massachusetts and New Hampshire who allocated their time among these systems (Tr. 8, at 50; Tr. 9, at 41).

As a result of the 1992 absorption of AWW Service's eastern region into New Jersey-American Water Company, AWW's subsidiaries in Connecticut and New York were no longer able to obtain access to functions previously provided by AWW Service (Tr. 8, at 48; Tr. 9, at 31). In order to provide these affiliates with required services, as well as provide Mass-Am and AWW's other operating subsidiaries in New England with similar services, AWW established a New England Region for AWW Service in 1993 (Tr. 8, at 4849; Tr. 9, at 31, 42).

Mass-Am entered into a contract with AWW Service on January 1, 1993 (Exh. MA-105). Under the Company's contract with AWW Service, AWW Service provides accounting, administration, communications, corporate secretarial, engineering, financial, human resource, information system, corporate operation, rates and revenue administration, risk management, and water quality services (id. at 2-10). As part of the contract, AWW Service provides the New England Region's operating companies with corporate officers who allocate their time to each of the New England Region's operating companies in accordance with the terms of the contract (Exh. MA-82).

Costs incurred by AWW Service rendered on behalf of Mass-Am are charged directly to the Company based on three different methods. First, personnel expense is determined

[52] For a detailed description of the services provided to the Company by ACMS, see D.P.U. 88-170, at 19-26.

D.P.U. 95-118

Page 98

based on the actual time spent by AWW Service personnel on Company matters, as reported on time sheets (Exhs. MA-82; MA-105, at 11). Second, costs incurred that are not specifically identifiable to a particular New England operating company, including support personnel and office expenses, are allocated based on the number of customers served at the end of the previous calendar year for the

five operating companies within the New England Region (Exhs. MA-82; MA-105, at 11). By this allocation method, Mass-Am was apportioned 26.12 percent of total AWW Service charges related to common costs during the test year (Exh. MA-82). Third, costs are based on AWW Service's overhead charges, which consist of pension and insurance premiums, legal and other fees, taxes, general office supplies, and interest, and are calculated each month and apportioned on the basis of each operating company's share of AWW Service's personnel costs (Exh. MA-79).

The Company stated that the presence of AWW Service resulted in benefits to customers (Tr. 9, at 41-42). According to Mass-Am, the AWW Service contract provides for additional services to those furnished under its previous agreement with ACMS (id.).

The Company also noted that the allocation of AWW Service-related expenses among the New England Region allows Mass-Am to obtain access to services that it would have to absorb fully itself if the Company were to obtain these directly (id. at 42). Furthermore, Mass-Am stated that because ACMS is a for-profit operation, and AWW Service provides services at cost, the Company receives the benefit of lower costs which accrue to ratepayers (id. at 41-42).

During the test year, the Company incurred \$303,111 in billings from AWW Service, of which \$252,045 were expensed and \$51,066 were capitalized (Exh. MA-81). As a result of a booking error, the Company had not recorded its AWW Service charges incurred during

D.P.U. 95-118

Page 99

January 1994 and December 1994 (Exh. MA-7, at 11A). Accordingly, the Company proposed to increase its test year cost of service by \$44,728 to reflect the actual test year's expense level (id.)

Prior to 1995, the Company received accounting, tax preparation, and risk-management services from ACMS (id. at 24; Tr. 9, at 38-40). While Mass-Am terminated its ACMS contract in 1993, it continued to rely on ACMS for a portion of its tax accounting requirements on an as-needed basis during part of the test year (Exh. MA-72). This function is now being provided to Mass-Am directly through and under the supervision of the Company's comptroller (Exh. MA-6, at 14). Therefore, the Company has proposed a decrease of \$17,804 to test year cost of service to eliminate the ACMS charges that it no longer incurs (Exhs. MA-6, at 14; MA-7, at 24).

2. Positions of the Parties

None of the parties addressed this issue on brief.

3. Analysis and Findings

The Department has stated that the operating expenses of companies engaged in transactions with affiliates will be subject to a greater level of scrutiny than would be the case if the utility dealt with all parties at arms' length. D.P.U. 88-170, at

21, D.P.U. 85-137, at 49-52 (1985). The Department has been concerned with AWW Service charges assessed within the AWW system. Dedham Water Company, D.P.U. 85-119, at 6-11 (1985); D.P.U. 1700, at 13-15 (1984); Oxford Water Company, D.P.U. 1699, at 11-13 (1984).

The 1993 reestablishment of AWW Service gives rise to many of the concerns the Department has expressed in previous Orders. Given this history and the close relationship

D.P.U. 95-118

Page 100

between AWW, AWW Service, and Mass-Am, the Department finds it appropriate to review the transactions between AWW Service and Mass-Am to determine whether the costs included in AWW Service's billings were: (1) for activities that specifically benefited Mass-Am and did not duplicate services already being performed by the Company; (2) made at a competitive and reasonable price; and (3) allocated by a formula that is both cost-effective in application and nondiscriminatory within each category of service specifically rendered to the Company, and for generalized services which are allocated to members of the AWW system. D.P.U. 88-170, at 21-22; D.P.U. 85-137, at 51-52; D.P.U. 1699, at 13.

With respect to the direct charges to Mass-Am by AWW Service, the Department has previously noted the desirability of direct assignment where possible. Commonwealth Gas Company, D.P.U. 87-122, at 24-25 (1987); Essex County Gas Company, D.P.U. 87-59, at 14 (1987). We find that the Company has demonstrated that these directly-charged services are provided expressly for the benefit of Mass-Am and are not duplicative of services already performed by the Company. Accordingly, the Department shall accept the Company's AWW Service charges for these items. Consistent with this finding, the Department shall accept AWW Service's method of allocating overhead among its New England affiliates.

With respect to indirect charges allocated to Mass-Am through the use of the customer allocators, the Department finds that the sharing of costs between AWW's New England operating companies for accounting, legal, management and other administrative services provides benefits to each of these companies, including Mass-Am, that outweigh the costs that would be incurred by each company if each had to bear the total costs of each

D.P.U. 95-118

Page 101

service alone. Accordingly, the Department finds that the Company's allocation of indirect charges produces an acceptable allocation technique. Nevertheless, we remain concerned that a customer-based allocator may not produce a reliable allocation of general charges between the operating companies in the New England Region. While a customer-based allocator may be suitable for billing or customer services, it would not necessarily be an appropriate allocator for certain other functions that are unrelated to customer numbers, such as accounting or engineering services. Depending upon the specific nature of the AWW Service function, different allocators, such as revenues, plant, customers, employees, payroll and property taxes may produce results that are more consistent with the nature of AWW Service's charges. See, e.g., Commonwealth Electric Company,

D.P.U. 89-114/90-331/91-80, Phase One at 81 (1991).

Further, the Department remains concerned about the minimal level of detail provided by Mass-Am in support of its AWW Service charges. The need for detailed information is particularly critical for the Company given the history of its AWW Service charges. Accordingly, the Company is hereby required to submit in its next rate case, as part of its direct filing, a complete accounting of its payments to AWW Service. This will include the specific nature of the service provided, the method (direct, indirect, or overhead) used to determine the expense level billed to the Company, and all supporting documentation including the overall AWW Service costs that are used as the basis for the allocation between the operating companies in the New England region.

With respect to the Company's proposed removal of ACMS charges from cost of service, the Department finds that the termination of the ACMS contract represents a known and measurable change to test year cost of service. Accordingly, the Department accepts the

D.P.U. 95-118

Page 102

proposed adjustment.

For purposes of this proceeding, the Department has determined that AWW Service's allocations are acceptable. However, Mass-Am is hereby placed on notice that the issue of allocations from AWW Service will be the subject of inquiry in the Department's investigation of the merger petition pending in D.P.U. 94-157 or the next rate case filed by Mass-Am, whichever occurs first.

C. Post Retirement Benefits Other Than Pensions

1. Background

On October 30, 1992, the Company filed a petition with the Department requesting approval to account for post retirement benefits other than pensions ("PBOP") expenses pursuant to the requirements of Financial Accounting Standard 106 ("FAS 106"), and authorization to record as a regulatory asset the full amount of PBOP costs, in excess of the pay-as-you-go amounts. Massachusetts-American Water Company, D.P.U. 92-239 (1993), Company Petition at 14.[53] On March 30, 1993, the Department issued a Letter Order granting the Company's request for deferral, but expressly declined to state the rate treatment of these expenses in a future rate case (Letter Order at 3; Order on Joint Motion for Reconsideration, D.P.U. 92-239-A/92-240-A at 1 (1993)). In the Letter Order the Department stated that:

[53] Effective January 1, 1993, the Company was required to change its financial book accounting method from cash to an accrual basis for PBOP (e.g., health care) in order to comply with generally accepted accounting principles and the provisions of FAS 106. D.P.U. 92-239, Company Petition at 4.

D.P.U. 95-118

Page 103

PBOPs under current pay-as-you-go accounting treatment are recoverable through rates. FAS 106 simply represents a change in the timing of cost incurrence. The Department sees no need to make an explicit guarantee of full recovery for an expense which is recoverable under long-standing policy. See Bay State

Gas Company, D.P.U. 92-111, at 228-229 (1992); Massachusetts Electric Company, D.P.U. 92-78, at 85-86 (1992); Commonwealth Electric Company, D.P.U. 92-172 (1992).

2. Company Proposal

In its filing, the Company's proposed PBOP adjustment was comprised of three parts, (1) an annual PBOP expense level; (2) an adjustment for AWW Service's PBOP; and (3) an amortization of the deferred PBOP expense (Exh. MA-7, at 13).

The Company proposed to base annual PBOP expense on the projected 1995 contributions to trusts established for this purpose (Exhs. MA-6, at 10; MA-8; DPU-179). Because the projected contributions for 1995 were less than the amounts recorded during the test year, the Company's proposal for annual PBOP expense would result in a decrease to cost of service of \$34,878 (Exh. MA-7, at 13). [54] In addition, the Company proposed to include an adjustment for AWW Service's PBOP expense of \$7,027 (id.).

Further, the Company included the amortization of \$89,046 in deferred 1993 PBOP expense in the proposed adjustment (Exh. MA-6, at 10). This amount represents costs deferred between the adoption of FAS 106 (January 1, 1993) and the establishment and beginning of payments to the trust established for PBOP, which began in the third quarter of 1993 (id.). The Company proposed to recover this amount over a five-year period resulting in the inclusion of an annual amortization of \$17,809 in the proposed PBOP adjustment (id.; Exh. MA-7, at 13).

[54] Amount charged to expense during test year	\$235,143
Less: Annual OPEB Expense	200,264
Difference	\$ 34,878

D.P.U. 95-118

Page 104

Therefore, the initial proposed net adjustment to test year PBOP expense was a decrease of \$10,042. [55] During the evidentiary phase of this case, the Company eliminated AWW Service's PBOP expense of \$7,027 from the calculation, resulting in a revised proposed decrease of \$17,069 in PBOP expense (Exhs. MA-7, at 13 (rev.); DPU-187).

- a. Annual PBOP Expense
 - i. Positions of the Parties
 - (A) Joint Hingham and Hull

Hingham and Hull urge the Department to use the figures in Record Request DPU-23, [56] which would result in a cost decrease of approximately 10 percent (Joint Intervenor Reply Brief at 15). They argue that this would be consistent with the goal of doing everything possible to reduce rate shock (id.).

- (B) Company

The Company states that it began to record PBOP in the manner required by FAS 106 on January 1, 1993 (Company Brief at 51). The Company also states that the FAS 106 expense declined subsequent to the test year because of changes to the group health insurance plan for employees, which added a far less costly managed choice option (Company Brief at 51, citing Tr. 9, at 133). According to the Company, its FAS 106 contribution amount is the same as its actuarially determined FAS 106 amount (Company Brief at 51). Because of this policy, the Company asserts that it is funding less

than the maximum allowable tax deductible amount (id., citing Tr. 9, at 134-135).

 [55] (\$34,878) + \$7,027 + \$17,809 = (\$10,042)

[56] RR-DPU-23 is a recomputation of 1995 FAS 106 costs based on medical trend rates provided by the Department.

D.P.U. 95-118

Page 105

Mass-Am argues that the medical trend rates used in the Company's actuarial projections of FAS 106 costs are reasonable and consistent with amounts forecasted by companies throughout the country (Company Brief at 51). Therefore, according to Mass-Am, the Company's projections should be used rather than the projection contained in Record Request DPU-23 (id.).

ii. Analysis and Findings

The Company's funding policy for PBOP is to contribute an amount equal to the FAS 106 cost provided that the contribution would not exceed the maximum tax-deductible amount (Exh. DPU-154, at MS-8).

The Department finds that funding tax-deductible amounts placed in trusts specifically designed to provide for the payment of employee PBOPs provides assurances that funds provided by ratepayers will be safeguarded and retained for employee benefits. D.P.U. 92-78, at 83. In addition, this method provides incentives to the Company to take advantage of tax benefits to lower its overall PBOP costs. Id.

Many of the concerns regarding PBOP health care costs expressed by the Department in D.P.U. 92-78 still exist. Several potentially volatile factors, including the inflation, discount and investment rates, medical cost predictions, medical trend assumptions, changes in the methods of providing health care and technological advances still give rise to enormous uncertainties regarding the future level of the Company's PBOP obligation.

In this case, the Department is particularly concerned about the short-term medical trend rates used in the actuarial studies. A medical trend rate of 11 percent is used for 1995 decreasing one percent per year until 1997 and one half percent a year thereafter until the year 2004 when the ultimate trend rate of 5.5 percent is reached (Exh. DPU-154, at SI-17).

D.P.U. 95-118

Page 106

The evidence indicates that a significant change in the rate of increase in medical costs has occurred recently (Exh. DPU-183). Medical cost increases for 1995 and 1996 have been in the two percent to four percent range (id.). In fact, for the estimation of 1996 costs, the Company's actuary recognized the decreasing trend by changing the medical trend assumption for the comprehensive medical plan (RR-DPU-15, Att. at 1). [57] This contributed to a decline in estimated FAS 106 cost for 1996 (id.).

In order for the Department to evaluate the impact that short-term medical trend rates have on the determination of FAS 106 costs, the Department requested the Company to recompute the FAS 106 costs using the 1995 actuarial report and using medical trend rates derived from Record Request DPU-23. [58] The Department finds

that the results of the calculations in Record Request DPU-23 are more reflective of short-term medical rates and therefore provide a more reasonable level of costs on which to base PBOP expense for ratemaking purposes. Therefore, the Department will decrease the proposed annual PBOP expense by an additional \$21,027. [59]

[57] The rates changed from a 10 percent increase in 1996 gradually decreasing to 5.5 percent in 2004 to the revised trend assumption of a 9 percent increase in 1996 gradually decreasing to 5.5 percent in 2003 (RR-DPU-15, Att. at 1).

[58] The Department requested that a medical trend rate of 7.5 percent be used for the years 1995 through 2000 inclusive and that the same medical trend rates that were used in the original study be used for the years 2001 through 2004 and after. All other assumptions were to remain the same (RR-DPU-23).

[59] \$17,033,131/19,024,135=.895 *213,070 = \$190,698

(Exh. DPU-M-23)

Less: charged to const.	190,698 * .0601 =	11,461
Annual PBOP expense		\$179,237
Proposed PBOP expense		200,264
(Exh. MA-7, at 13)		
Additional decrease		\$ 21,027

D.P.U. 95-118

Page 107

b. Deferred PBOP Costs
i. Positions of the Parties

(A) Joint Hingham and Hull

Hingham and Hull argue that the Department should consider an amortization period longer than five years (Joint Intervenor Reply Brief at 15).

(B) Company

The Company argues that its proposed five year amortization of 1993 deferred PBOP costs of \$89,046, without interest on the unrecovered balances, is in accordance with Department precedent in D.P.U. 95-40, at 43 (Company Brief at 51-52).

ii. Analysis and Findings

The Department has previously held that financial accounting standards do not automatically dictate ratemaking treatment. D.P.U.

92-78, at 79; D.P.U. 85-270, at 118-119. The \$89,046 represents costs determined according to the provisions of FAS 106. Although the Company cites D.P.U. 9540 to support its request for amortization, in that case, the Department granted amortization of an additional contribution to the PBOP trusts. D.P.U. 95-60, at 43. As the Company acknowledges in Exhibit DPU-179 the Department has tied recovery of PBOP expenses to tax deductible contributions. D.P.U. 92-78, at 83. In the present case, there is no evidence to indicate that the Company contributed the \$89,046 to the trust fund. Therefore, the Department denies recovery of the \$89,046 and will eliminate the proposed annual amortization of \$17,809.

The total decrease to the Company's proposed PBOP adjustment (revised) is \$38,836. [60]

[60] \$21,027 + 17,809 = \$38,836

D.P.U. 95-118

Page 108

D. Pension Expense
1. Background

On October 30, 1992 the Company filed a petition with the Department requesting approval to account for pension expenses pursuant to the requirements of Financial Accounting Standard 87 ("FAS 87"), and authorization to defer pension expenses determined according to FAS 87 starting with its 1990 expenses. D.P.U. 92-239.

In its petition, Mass-Am stated that, because of Internal Revenue Code limitations, it had been unable to make contributions to its-pension plan for calendar years 1987 through 1991 and did not anticipate being able to make contributions during 1992 and 1993 (id. Company Petition at 7). In addition, the Company stated that, under the provisions of FAS 87, its accrued liability was zero in calendar years 1987 through 1989 (id. at 7-8). The Company began accruing expense under FAS 87 in 1990 (id.). The Company proposed to defer its 1990 FAS 87 expense and to continue recording its full FAS 87 pension expense as a deferred asset (id.). On March 30, 1993, the Department issued a Letter Order granting the Company's request for deferral, but expressly declined to state what rate treatment these expenses would be accorded in a future rate case (Letter Order at 3; Order on Joint Motion for Reconsideration, D.P.U. 92-239-A/92-240-A at 1).

The Company resumed making contributions to the pension fund in August 1994 and made total payments of \$89,697 applicable to tax year 1994 (RR-DPU-12). [61] The Company anticipates contributing \$96,095 applicable to tax year 1995 of which \$74,033 had been

[61] Payments were made on August 15, 1994, November 15, 1994, February 15, 1995 and May 15, 1995.

D.P.U. 95-118

Page 109

contributed as of February 1996 (Exh. DPU-156, RR-DPU-12). [62]

2. Company Proposal

In its initial filing, the Company proposed to include pension expense in the cost of service based on the estimated contributions of \$103,942 [63] to AWW's pension plan for plan year 1995/1996 (Exhs. MA-6, at 10-11; MA-7, at 14; MA-8). After adjusting for \$6,247 charged to construction, the proposed annual pension expense was \$97,695 (Exh. MA-7, at 14). The total proposed adjustment to test year expense was \$59,783 (id.).

During the evidentiary phase of this proceeding, the Company eliminated AWW Service's pension expense of \$11,561 from the calculation of the proposed adjustment resulting in a remaining adjustment of \$48,222 (Exh. DPU-187).

Near the conclusion of the evidentiary phase, the Company proposed a revision to the pension expense adjustment (RR-DPU-20). First, the Company proposed to adjust test year pension expense by \$44,777 resulting in a corresponding reduction to the initially proposed adjustment (id.). The Company then stated that since the last rate case a total of \$234,322 in deferred pension expense had been recorded on its books at test year end and the Company

proposed to amortize this deferral over a five year period, resulting in a proposed annual amortization of \$46,864 (id.).

The net effect of the above changes was a revised total proposed pension expense of \$144,559 (Exh. MA-7, at 14 (rev.)). Therefore, the total proposed pension adjustment was

 [62] Payments were made on August 15, 1995, November 15, 1995 and February 15, 1996.

[63] Updated information indicates that this amount is actually \$96,095 (Exh. DPU-156, Attachment, third page).

D.P.U. 95-118

Page 110

\$50,309 (id.). [64]

a. Annual Pension Expense

i. Positions of the Parties

The Company states that it proposed an adjustment to its test year cost of service to reflect its actual 1995 contributions to its pension fund (Company Brief at 52). Mass-Am maintains that it records pension expense on its books based on FAS 87 and that the amount recorded on its books represents the actual pension expense for the year (Company Brief, citing Exhs. MA-7, at 14; MA-66, Tr. 9, at 127-128).

ii. Analysis and Findings

The Department has stated that it does not endorse any specific method for the calculation of pension expense for ratemaking purposes and that the intricacies of this issue warrant an investigation on a case-by-case basis. D.P.U. 95-40, at 44; D.P.U. 92-78, at 46.

While the evidence indicates that the Company has made contributions to the pension fund for tax years 1994 and 1995, the future level of funding remains uncertain. The 1995 Actuarial Report indicates that the Company is once again approaching the funding limit for income tax purposes (Exh. DPU-158, Att. at MS-9). For 1995 the ERISA Funded Status was 98.1 percent (id.). Projected 1996 pension expense under FAS 87 declined because of a large return on plan assets in 1995 (RR-DPU-15, Att, para. 1). The Company states that the allocated pension contribution level for the fiscal year beginning July 1, 1996 is not yet available (RR-DPU-21, 2nd Supp.). Therefore, the Department is unable to determine what amount, if any, that the Company will contribute to its pension funds beginning July 1, 1996.

 [64] \$48,222 - 44,777 + 46,864 = \$50,309

D.P.U. 95-118

Page 111

Because the volatility of investment results significantly affects the contribution levels, the Department will determine a representative level of pension expense. The Department will base pension expense on the four-year average of the cash contributions (less the portion capitalized) for tax years 1992 through 1995, inclusive. Therefore, the Department will allow \$43,656 as a representative level of annual pension expense. [65] This will

result in a decrease of \$54,039 to the proposed annual expense. [66] However, the Department reiterates that it does not endorse any specific method as appropriate for future proceedings and will continue to investigate this issue on a case-by-case basis.

b. Deferred Pension Expenses

i. Positions of the Parties

(A) Joint Hingham and Hull

Hingham and Hull maintain that the request to amortize for five years the deferred pension expense that the Company has accumulated since 1990 should be denied (Joint Intervenor Reply Brief at 15). In the alternative, they argue that, to the extent that it is appropriate to amortize any cost, a longer period should be used (id.). Hingham and Hull maintain that it is unclear why the Company did not pay the cost before he test year (id.).

(B) Company

In response to Record Request DPU-20, the Company claims that it revised its pension adjustment (Company Brief at 52). Mass-Am asserts that it has been deferring pension expenses since its last rate case in 1990 and that it was able to make a contribution

[65] (\$0 + \$0 + \$89,697 + \$96,095)/4	=	\$46,448
Less: \$46,448 * .0601 (Exh. MA-7, at 14)	=	2,792
Expense		\$43,656
[66] \$97,695 - 43,656 = \$54,039		

to its pension fund in July 1994 (Company Brief at 52, citing Exh. DPU-150). The Company requests a five year amortization of the deferred pension expense that has accumulated since 1990 (Company Brief at 52). Mass-Am argues that the revised pension cost adjustment is a reduction from the originally filed amount and should be allowed by the Department (id., citing Exh. MA-7, at 14 (rev.)).

ii. Analysis and Findings

As noted in Section VI.C.2.a.ii, above, the Department has previously held that financial accounting standards do not automatically dictate ratemaking treatment. Massachusetts Electric Company, D.P.U. 92-78, at 79 (1992); Western Massachusetts Electric Company, D.P.U. 85-270, at 118-119 (1986).

In the past, the Department denied Western Massachusetts Electric Company's proposal to recover pension expense based on FAS 87. Western Massachusetts Electric Company, D.P.U. 87-260, at 39-47 (1988); Western Massachusetts Electric Company, D.P.U. 87-260-A at 9-12 (1988). The Department stated that amounts paid into the pension fund attributable to past years would be considered for rate treatment. D.P.U. 87-260-A at 12. The Department subsequently stated that it could not guarantee rate treatment until the facts are known and presented in a rate case. Western Massachusetts Electric Company, D.P.U. 88-250, at 73 (1989).

In this case, the deferred amount was accumulated between 1990 and 1994, the point at which the Company resumed making contributions to its pension fund. The evidence indicates that the deferred amount represents costs according to FAS 87, not actual contributions to a pension fund. Accordingly, the Department denies recovery of the \$234,322 and will eliminate the proposed annual

amortization of \$46,864.

D.P.U. 95-118

Page 113

Therefore, the total decrease to the Company's proposed pension expense is \$100,903.[67]

E. Chemical Expense

1. Introduction

Mass-Am calculated the annual cost of chemicals as \$333,268, an increase of \$107,251 over test year expense, of which \$70,500[68] is attributed to the additional cost of chemicals associated with the WTP (Exhs. MA-7 at 16; MA-8 at 15).

Recognizing that the types of chemicals and the volumes used during the test year at the Company's existing facilities in Hingham will not be representative of the future operation of the WTP, the Company recalculated its chemicals expense by applying the most recently accepted bid unit costs to: (1) the volumes of chemicals actually used during the test year at the water supply sites located in Millbury and Oxford; and (2) the volumes of chemicals projected to be used at Downing Street and the WTP (RR-DPU-18). This combination of actual test year experience and projected calculations produces an anticipated annual level of chemicals expense of \$329,727 (id.).

2. Position of the Parties

None of the parties addressed this issue on brief.

3. Analysis and Findings

The Department's practice regarding chemicals expense is to include a proforma amount in the cost of service, equal to the test year amount of chemicals used, multiplied by

[67] $\$54,039 + \$46,864 = \$100,903$

[68] The Company proposes to recover the WTP chemical cost through a surcharge. See Section VIII.C.2.b, below.

D.P.U. 95-118

Page 114

the contractually-agreed unit price of each chemical. Wannacomet Water Company, D.P.U. 84-33, at 66 (1984). However, in the present case the Company is making significant changes to its water treatment processes; in addition to a centralized water treatment in Service Area A, the water treatment processes have been upgraded with new chemicals to improve water quality.

The Department has addressed such a change in chemical application by annualizing the amount of chemicals used and by developing a new proforma chemical expense associated with the additional chemical load resulting from anticipated change in chemical usage. Massachusetts-American Water Company, D.P.U. 88-172, at 19-20 (1989); Oxford Water Company, D.P.U. 86-172, at 13-16 (1987). In the present case, there are two additional factors to be considered. First, because the WTP has been in service for only one month, there is no actual experience from which to derive an annualized expense level. Second, the Company is including a portion of its chemical expense in its surcharge mechanism (Exhs. MA-6, at 15; MA-2, at Sheet No.7; MA-7, at 26; MA-8, at 19).

Regarding the development of a representative level of chemical expense for inclusion in the cost of service to be

applicable to all of the Company's customers, the Department finds that it is reasonable to address the chemical expense through two separate mechanisms. First, to apply an equitable change in the chemical expense to all of the Company's customers, the Department will allow the base rates to reflect the test year level of chemicals usage at the updated unit costs. Second, the Department will allow the total projected chemical cost associated with the additional chemical expense attributable to the WTP to be recovered via the WTP surcharge. Therefore, the cost of service will include \$259,227 for the chemicals expense to be applied through base rates to all customers. Accordingly, the

D.P.U. 95-118

Page 115

Company's revised cost of service for this item is approved.

F. Rate Case Expense

1. Introduction

During the test year, Mass-Am did not book any rate case expense (Exh. MA-7, at 17). In its initial filing, the Company estimated that it would incur \$150,000 in legal, consulting, and

outside service expenses relative to this proceeding (id.). The Company proposed to normalize this amount over three years, the average interval between what it represented as the filing dates for its last four rate proceedings (id.). On April 19, 1996, the Company submitted an updated rate case expense of \$303,139, [69] which it proposed to normalize over three years, for a total annual expense of \$101,046 (Exh. MA-7, at 17 (rev)).

2. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull acknowledge that this proceeding involved far more effort, discovery, and hearings than the typical rate case (Joint Intervenor Brief at 7). However, they contend that even in this situation, the Company must demonstrate that its rate case expense was reasonable and prudently incurred (id.). Hingham and Hull point out four areas of concern with the Company's overall expenses.

First, Hingham and Hull assert that the record is unclear as to whether the Company is seeking \$297,465 or \$303,139 in total rate case expense (id.). Second, they assert that the Company's payment of \$15,000 to Price Waterhouse related to Ms. McCarthy's testimony is

[69] The updated rate case expense was broken down as follows: (1) \$74,491 related to AWW Service; (2) \$24,055 to Guastella Associates; (3) \$5,442 for Metcalf & Eddy; (4) \$15,000 for Price Waterhouse; (5) \$5,710 for Saint Communications, a public relations firm; (6) \$154,420 for Peabody & Brown; and (7) \$24,021 for miscellaneous expenses, including printing, transcripts, and legal notices (Exh. MA-7, at 17 (rev)).

D.P.U. 95-118

Page 116

neither documented nor reasonable in light of what Hingham and Hull consider to be the scope of Ms. McCarthy's testimony (id. at 8). Third, Hingham and Hull challenge the inclusion of \$5,710 in payments to Saint Communications, arguing that the hourly fee was

unreasonable (id.). They further question the need for the Company to hire a public relations firm to assist in the presentation of the Company's rate application (id.). They claim that the use of Saint Communications belies the Company's representations during the hearings that public relations expenses were not included in Mass-Am's proposed rate case expense (id. at 8-9). Finally, Hingham and Hull propose that, to the extent the Department dismisses or disallows any portion of the Company's proposed surcharge, the legal expenses and other costs associated with that part of the proceeding should be denied (id. at 9).[70]

b. Company

The Company notes that its level of rate case expenses in this proceeding, \$303,139, was significantly greater than in previous cases because of the novel nature and complexity of issues raised in this proceeding (Company Brief at 53; Company Reply Brief at 5). Mass-Am points to the 13 days of evidentiary hearings, the number

of intervenors and witnesses participating in the case, and the volume of discovery to state that the instant case is atypical of water rate cases (Company Brief at 53). The Company contends that in light of the issues raised and number of active parties, its rate case expense is reasonable (id. at 53-54). Mass-Am also argues that its proposed rate case normalization period is consistent with Department practice (id. at 53, citing D.P.U. 95-40, at 58).

[70] Hingham and Hull also propose the same treatment for the Company's rate case expenses relative to its cost of service study, citing what they contend are the deficiencies contained in that filing Point Intervenor Brief at 19).

D.P.U. 95-118

Page 117

Mass-Am argues that the \$15,000 in expenses related to Price Waterhouse represents the actual billings to the Company, and includes Ms. McCarthy's assistance on various accounting issues, including project financing (Company Reply Brief at 5). Mass-Am maintains that Hingham and Hull have failed to demonstrate that the expense is unreasonable and that the expense should be included in rate case expense (Company Reply Brief, at 5-6).

The Company defends its payments to Saint Communications. It stated that Saint Communications assisted in preparing a detailed presentation made at the public hearing in Hull in response to a request from the Department and made on other occasions to educate the public about the WTP (id. at 6). Mass-Am further contends that there is no basis in the record to support Hingham and Hull's claims that the hourly rate charged by Saint Communications was excessive (id.).

Finally, Mass-Am maintains that Hingham and Hull have offered no basis on which to disallow rate case expense on the basis of the outcome of individual issues, such as its proposed surcharge and cost allocation proposals (id. at 7). The Company argues that any disallowances can only be made based on record evidence, which does not exist, and specific findings by the Department with respect to the particular expense (id.).

3. Analysis and Findings

The Department's practice in determining the amount of regulatory litigation expense to include in rates is to normalize these costs so that a representative annual amount is included in

the cost of service. D.P.U. 95-40, at 57 (1995); D.P.U. 93-60, at 143. The Department normalizes these expenses based on the periodicity of rate cases which is based on the elapsed time between the filing of a company's last four rate cases. By using four filing dates, three separate time periods between rate filings can be determined. The average

D.P.U. 95-118

Page 118

of these three periods, rounded to the nearest whole number,

represents the appropriate normalization period. Berkshire Gas Company, D.P.U. 1490, at 33-34 (1983).

The Company contends that the appropriate normalization period is three years based on historical filing dates (Exh. MA-69). Included in the Company's calculation are the filing dates of the Company's predecessors, including Hingham Water Company, Massachusetts-American Water Company, and Oxford Water Company (id.). [71] The two latter companies were merged into the first-named company pursuant to Hingham Water Company, D.P.U. 89-134 (1989). [72] Insofar as the Company is the corporate successor of three separate companies, the Department finds it appropriate to consider the average rate case filing dates of each predecessor separately and not combined.

Additionally, the Company has included April 16, 1985 as one of the filing dates used in its calculation, which relates to a series of concurrent cases filed by the Company and its Massachusetts affiliates. These petitions were subsequently withdrawn by the respective companies. Hingham Water Company, D.P.U. 85-116/85-117/85-118/85-120, at 1 (1986). Because D.P.U.

85-120 was withdrawn and did not result in a fully litigated proceeding or a finding on the merits, the Department finds that this case should be removed from the calculation of the time between rate cases. D.P.U. 88-170, at 14.

Therefore, including the present case and excluding the withdrawn rate petitions, the dates of the Company's last four rate case filings under its present and former names were November 16, 1995, June 15, 1990, August 15, 1988, and July 15, 1983. The elapsed time

[71] The Massachusetts-American Water Company referenced herein was a different corporation and now constitutes Mass-Am's operations in the town of Millbury.

[72] Hingham Water thereafter adopted the name of Massachusetts-American Water. D.P.U. 89-134, at 2.

D.P.U. 95-118

Page 119

between each of these filing dates is 5.42 years (D.P.U. 90-146 to D.P.U. 95-118), 1.83 years (D.P.U. 1590 to D.P.U. 90-146), and 5.08 years (D.P.U. 1590 to D.P.U. 88-170), for an average interval of 4.11 years. The Department has previously found the historic normalization period between rate cases for Oxford Water Company was 2.02 years. Oxford Water Company, D.P.U. 88-171, at 13 (1989). The Department has previously found the historic normalization period for Massachusetts-American Water was 2.61 years. D.P.U.

88-172, at 22. Based on the foregoing, the Department finds that the appropriate normalization period for the Company is 2.91 years, which is rounded to three years. See D.P.U. 88-170, at 14-15.

With respect to the inclusion of the \$15,000 cost for the Price Waterhouse work product, the Company failed to provide any level of supporting documentation. The record is inadequate to make

a determination as to the cost of the work performed by Price Waterhouse in relation to the actual services provided.

Accordingly, the Department finds that the Company has failed to substantiate its expenses from Price Waterhouse, and accordingly disallows these expenses from cost of service.

With respect to the inclusion of \$5,710 in charges from Saint Communications, the Department notes that these charges related to presenting information on this rate case to the general public, including making presentations made at public hearings. The Department is not persuaded that the services provided by Saint Communication were related to public relations or that its rates were excessive in relation to the scope of work performed. Accordingly, the Department shall allow the inclusion of these costs in Mass-Am's rate case expense.

D.P.U. 95-118

Page 120

With regard to Hingham and Hull's proposal to disallow a portion of rate case expense based on the disposition of the Company's proposed surcharge and cost allocation, the Department finds no merit. A company is entitled to legal representation, both in prosecuting a legal claim and in defending against a legal claim. Dedham Water Company, D.P.U. 84-32, at 22-23 (1984); Boston Gas Company, D.P.U. 1100, at 105-107 (1982). The Department has not found inclusion of these expenses in cost of service to be contingent upon the final outcome of the underlying proceeding. Boston Gas Company, D.P.U. 1100, at 105-107 (1982). Linking recovery of rate case expense based on the outcome would constitute an unwarranted and inappropriate intrusion into management affairs. Moreover, it would also have the effect of chilling management's responsibility to present evidence in support of its position on a particular issue in accordance with its own good faith judgment. See D.P.U. 89-114/90-331/91-80 Phase One at 42. Accordingly, the Department rejects Hingham and Hull's proposal.

Based on the foregoing, the Department finds that the appropriate level of rate case expense is \$288,139, and that the appropriate normalization period is three years. This produces an annual rate case expense of \$96,046. Accordingly, Mass-Am's proposed cost of service shall be reduced by \$5,000.

G. Well Maintenance Expense

1. Company Proposal

During the test year, Mass-Am booked \$4,527 to well maintenance expense (Exh. MA-7, at 19 (rev.)). The Company proposes an increase of \$15,494 to reflect what it considered to be a representative level of well maintenance expense (id.; Exh. MA-6, at 12).

D.P.U. 95-118

Page 121

To determine this expense level, Mass-Am examined the historical interval between well maintenance projects for each of its 14 wells and concluded that the average interval between

maintenance projects was between one and 37 years, depending upon the specific well (Exh. MA-7, at 19 (rev.)). Mass-Am projected the date each well would have to be cleaned and treated based on the length of time that had elapsed since the last maintenance date, and determined that well maintenance dates range from 1996 to 2005 (id.). Next, the Company developed a projected cost for each well by applying to the actual cost associated with the previous well cleaning project an escalation factor of five percent per year from the date the well was last cleaned to the next anticipated well maintenance date, thereby arriving at well maintenance costs ranging from \$2,000 to \$20,300 (Exh. MA-6, at 12). The Company discounted these future costs to present-value dollars to develop an annualized well maintenance expense for each well ranging from \$441 to \$2,211, totaling \$20,021 (Exh. MA-7, at 19 (rev.)).

2. Positions of the Parties

Mass-Am contends that it is particularly important to normalize year-to-year fluctuations in this expense category because well maintenance could have a dramatic impact on the Company's expenses (Company Brief at 55). The Company claims that its method to determine the projected well maintenance only reflects current costs as of 1995 (id. at 54). The Company asserts that this is a representative level of the typical cost increases associated with this type of maintenance (id., citing Exh. DPU-146).

3. Analysis and Findings

There are three classes of expenses which the Department considers recoverable through rates: (1) annually recurring expenses; (2) periodically recurring expenses; and

D.P.U. 95-118

Page 122

(3) extraordinary non-recurring expenses. D.P.U. 1270/1414, at 32-33. Representative levels of expense that recur on an annual basis are eligible for inclusion in the cost of service. Id. Expenses that do not occur on an annual basis but rather are demonstrated to recur periodically over time will include only the appropriate portion of the expense as representative. Id. Non-recurring expenses are ineligible for inclusion in the cost of service, unless it is demonstrated that they are so extraordinary in nature and amount as to warrant their collection by amortizing them over an appropriate time period. Id.

The Department considers well maintenance expense to be a periodically recurring expense. D.P.U. 88-170, at 15-17. Therefore, it is appropriate to normalize a utility's well cleaning expense so that only a representative portion is included in the cost of service.

In this case, the Company has offered separate normalization periods for each of its wells. The Department finds that this approach provides a more reliable depiction of Mass-Am's well maintenance activities than using an aggregated normalization period. The Department also finds that the Company has selected an appropriate normalization period for each of its wells. Because the Department does not permit a company to accumulate funds in advance through rates for future maintenance, the Department rejects the

Company's use of a five percent annual inflation rate to prorate future well maintenance expense. Grafton Water Company, D.P.U. 18268, at 8 (1975).

Based on the Company's previous intervals between well maintenance projects, the Department finds that the proposed normalization period for each well is reasonable. Application of these intervals to the most recent well maintenance cost for the respective wells, ranging from \$14,500 to \$27,200, produces a representative level of well maintenance expense of \$12,967. Accordingly, the Company's proposed cost of service shall be reduced

D.P.U. 95-118

Page 123

by \$7,054.

H. Tank Maintenance Expense

1. Company Proposal

During the test year, Mass-Am booked \$25,988 to tank maintenance expense (Exh. MA-7, at 20 (rev.)). The Company proposes an increase of \$22,716 to reflect what it considered to be a representative level of tank maintenance expense (id.).

To determine this expense level, Mass-Am examined the historical interval between tank painting projects for each of its five standpipes and storage tanks and determined that an appropriate normalization period for its Strawberry Hill tank in Hull would be 10 years, with a normalization period of 12 years for its North Main Street standpipe in Oxford, and a normalization period of 15 years for both its Turkey Hill standpipe in Hingham and Accord Pond tank in Norwell (id.). [73]

Using this information, Mass-Am projected the date ranging from 1995 to 2005 that each tank would have to be repainted (id.). Next, the Company developed a projected cost for each tank by applying an escalation factor of five percent per year from the date the tank was last painted to the next anticipated tank painting date to the actual cost of the previous tank painting, thereby developing cost estimates ranging from \$55,700 to \$303,565 (id.; Exh. MA-6, at 12). The Company discounted these future costs to present-value dollars to develop a current cost ranging from \$53,000 to \$205,400 depending upon the tank. [74]

[73] Because the Company's Burbank Reservoir tank is an in-ground structure, this facility does not need painting.

[74] In its initial filing, the Company proposed a tank painting expense of \$200,000 for its Strawberry Hill tank (Exh. MA-7, at 20). Subsequently, the Company executed a contract for this tank with a price of \$195,000 (Exh. DPU-147; RR-DPU-17).

D.P.U. 95-118

Page 124

Applying the respective normalization periods to each of the cost estimates, the Company determined that the annualized cost of its Strawberry Hill tank would be \$19,500, with an annualized cost for

the Turkey Hill standpipe of \$13,047, an annualized cost of \$11,740 for its Accord Pond tank, and \$4,417 for its North Main Street standpipe, thereby resulting in a total annual tank maintenance cost of \$49,850 (Exh. MA-7, at 20 (rev.)).

2. Positions of the Parties

Mass-Am contends that it is particularly important to normalize year-to-year fluctuations in this expense category,

because tank maintenance could have a dramatic impact on the Company's expenses (Company Brief at 55). The Company claims that its method to determine the projected tank maintenance expense reflects only current costs as of 1995 (id. at 54). The Company asserts that this is a representative level of the typical cost increases associated with this type of maintenance (id., citing Exh. DPU-146).

3. Analysis and Findings

As noted above, there are three classes of expenses which the Department considers recoverable through rates: (1) annually recurring expenses; (2) periodically recurring expenses; and (3) extraordinary non-recurring expenses. D.P.U. 1270/1414, at 32-33. Representative levels of expense that recur on an annual basis are eligible for inclusion in the cost of service. Id. Expenses that do not occur on an annual basis but rather are demonstrated to recur periodically over time will include only the appropriate portion of the expense as representative. Id. Non-recurring expenses are ineligible for inclusion in the cost of service, unless it is demonstrated that they are so extraordinary in nature and amount as to warrant their collection by amortizing them over an appropriate time period. Id.

D.P.U. 95-118

Page 125

The Department considers tank maintenance to be a periodically recurring expense. D.P.U. 88-170, at 17-18. Therefore it is appropriate to normalize a utility's tank maintenance expense so that only a representative portion is included in the cost of service.

In this case, the Company has offered separate normalization periods for each of its tanks. The Department finds that this approach provides a more reliable depiction of Mass-Am's tank maintenance activities than using an aggregated normalization period. The Department also finds that the Company has selected an appropriate normalization period for each of its tanks. However, the Department rejects the Company's use of a five percent annual inflation rate to prorate future tank maintenance expense, because the Department does not permit a company to accumulate funds in advance through rates for future maintenance. D.P.U. 18268, at 8.

Based on the historic tank maintenance expenses, including the final bid award for the Strawberry Hill tank painting project and the historic interval between tank painting projects, the Department finds that the annualized cost of the Strawberry Hill tank is \$19,500, with an annualized cost for the Turkey Hill standpipe of \$9,735, and that the annualized cost for the Accord Pond tank and North Main Street standpipe is \$9,200 and \$2,583,

respectively. Therefore, the Department finds that a representative level of tank maintenance expense is \$41,018. Accordingly, the Company's proposed cost of service shall be reduced by \$7,686.

I. Amortization of Pipeline Design

1. Introduction

During the test year, Mass-Am booked \$26,244 in engineering design costs associated with the proposed replacement of a main in Oxford (Exh. MA-7, at 25). The Company stated that, after it completed design work for the proposed main, the Company was notified

D.P.U. 95-118

Page 126

by the Massachusetts Highway Department ("MHD") that the MHD intended to do resurfacing work in the area of the proposed main replacement project (Exhs. DPU-149; MA-6, at 14-15). The Company stated that due to such MHD construction, the main replacement project was cancelled (id.). In order to reflect a three-year amortization of the costs of the cancelled project, Mass-Am proposed a reduction to test year engineering expense of \$17,496 (Exh. MA-7, at 25).

2. Positions of the Parties

a. Oxford

Oxford contends that the Company offered no explanation why it did not obtain a MHD permit to install the water main in conjunction with the MHD's resurfacing project as suggested in the MHD notice (Oxford Brief at 6). Oxford argues that it is unfair to charge ratepayers with the engineering cost for a project that was cancelled because of poor planning

b. Joint Hingham and Hull

Hingham and Hull contend that the Company's reliance on D.P.U. 95-92 is misplaced and that the ratepayers should not have to bear the cost of projects, such as the Oxford water main project, that were initiated by the Company but subsequently cancelled due to the Company's poor project coordination (Joint Intervenor Brief at 9-10).

c. Company

The Company states that the MHD notice dated November 22, 1993 established a time frame for companies to complete construction before the MHD would start denying street opening permits (Exh. DPU-149). According to the Company, MHD stated that once the road was paved, the granting of street opening permits for the next five years would be

D.P.U. 95-118

Page 127

limited to emergency repairs or work that was absolutely unavoidable (id.). The Company states that it could not complete its main replacement work in the time frame established by the MHD, and therefore the Company cancelled the main replacement project (Tr. 8, at 18, 67). The Company maintains that its external auditors would not permit it to carry the design costs on its books for the period required until the MHD would authorize a street opening (Company Brief at 55-56).

The Company states that over an extended period of time, the scope and magnitude of the project has a significant likelihood of changing, and the validity and value of a study performed in 1993-1994 would be greatly diminished with respect to construction performed in the period 2000-2001 (Exh. DPU-139). The Company contends that its proposal is consistent with Department precedent in D.P.U. 95-92, which permits a company to amortize engineering and development costs if a project is ultimately not completed as a part of its next general rate case (Company Reply Brief at 56).

3. Analysis and Findings

The issue to be decided here is not whether the Company was prudent in its management of the proposed main replacement project in Oxford, but rather if the expense incurred for engineering design costs is recoverable under established Department precedent. There are three classes of expenses which the Department considers recoverable through rates: (1) annually recurring expenses; (2)

periodically recurring expenses; and (3) extraordinary non-recurring expenses. D.P.U. 1270/1414, at 32-33. Representative levels of expense that recur on an annual basis are eligible for inclusion in the cost of service. Expenses that do not occur on an annual basis but rather are demonstrated to recur

D.P.U. 95-118

Page 128

periodically over time will include only the appropriate portion of the expense as representative. Id. Non-recurring expenses are ineligible for inclusion in the cost of service, unless it is demonstrated that they are so extraordinary in nature and amount as to warrant their collection by amortizing them over an appropriate time period. Id.

The record in this case does not contain evidence to support the treatment of this charge as either an annually recurring expense or a periodically recurring expense. In considering this expense to be non-recurring, the Department finds that, based on the amount in question, the overall impact on the Company's finances of this engineering design expense is not extraordinary. Accordingly, the Department directs that the Company's cost of service as filed, shall be reduced by \$8,748, which is the annual amortization amount proposed by the Company.

J. Savings From Proposed Merger

1. Introduction

On September 13, 1994, Mass-Am and the Salisbury Water Supply Company ("Salisbury") filed a joint application for approval to merge with Conn-Am and New York-Am into Hampton Water Works Company, a New Hampshire corporation. This petition was docketed as D.P.U. 94-157. The Department has deferred action on this petition pending legislative action on enabling legislation that would permit Mass-Am and Salisbury to merge with an out-of-state corporation.

2. Positions of the Parties

a. Oxford

Oxford argues that the Company has predicted a reduction in operating costs by \$263,155 per year due to the proposed merger (Oxford Brief at 1). Oxford contends that the

D.P.U. 95-118

Page 129

Company's proposed cost of service does not reflect the savings anticipated to be achieved by the merger (id.). Oxford is concerned that the Company will earn excessive returns if the rates proposed in the present rate case are approved, the proposed merger is approved, and then the Company proceeds to enjoy both the new rates and the merger savings (id. at 2). Oxford states that in setting the fair return in this case, the Department should take into account the possibility of savings to be achieved by merger (id.). In support of its position, Oxford cites a Supreme Judicial Court case which upheld the Department's decision to consider savings in financing costs arising from a company's subsidiary status when setting the fair rate of return (id. at 3). See *Wannacomet Water Co. v. Department of Public Utilities*, 344 Mass. 716, 465-571 (1963).

Oxford proposes that any water rate increase approved in this case should be effective only until the end of the Company's first full fiscal year following a merger, with the rates thereafter to

be reduced to reflect savings of \$263,155 per year (Oxford Brief at 3). As part of this proposal, Oxford suggests that the Company file revised rate schedules if the allowed return proves to be inadequate considering the savings actually achieved by the merger (id.).

b. Company

The Company argues that the estimated savings referenced in D.P.U. 94-157 are purely speculative and do not provide a basis for any adjustment to the Company's costs in this proceeding (Company Brief at 60). The Company points out that the estimates were developed over two years ago, and that the Department has not acted on the application, has held no hearings, and has not taken any evidence in that proceeding (id.). The Company submits that the merger is contingent upon approval by three other New England state utility commissions (id.). To date only New Hampshire has done so (id.). The Company maintains

D.P.U. 95-118

Page 130

that the proposed merger is not an issue in this proceeding and that it has already adjusted its test-year cost of service to remove merger-related expenses therefrom (Company Reply Brief at 53).

The Company further maintains that since the merger application was filed, many of the economies of scale discussed in the merger application have already been implemented, thus producing reduced costs which have been incorporated into its test year cost of service (id.). The Company asserts that an attempt to incorporate further "speculative" savings would violate Department precedent which sets rates based upon a representative level of test-year expense, adjusted for expense items which can be shown to constitute "known and measurable" changes (id. at 55). The Company points out that should the Department approve the merger, the Department could at that time determine whether any adjustments to the Company's rates would be necessary (Company Brief at 60).

3. Analysis and Findings

Oxford proposes that the Department take into account the possibility of savings to be achieved by a proposed merger. In establishing rates for companies under its jurisdiction, the Department relies on historical test-year data, adjusted only for known and measurable changes. D.P.U. 95-92, at 28; Eastern Edison Company, D.P.U. 1580, at 13-17 (1984). The selection of an historical twelve-month period of operating data as a basis for setting rates is intended to reflect a representative level of a company's revenues and expenses which, when adjusted for known and measurable changes, will serve as a proxy for future operating results. D.P.U. 1580, at 13-17.

The Department will review the proposed merger in D.P.U. 94-157. To date, no hearings or discovery have taken place in that docket. Therefore, any savings that may

D.P.U. 95-118

Page 131

result due to the proposed merger are not known and measurable at this time. The Department has previously rejected requests by intervenors for adjustments for savings achieved by projects when the record showed that the savings were speculative or there was uncertainty that savings would be achieved in the rate year. [75]

Bay State Gas Company, D.P.U. 92-111, at 142 (1992); D.P.U. 92-78, at 51. Accordingly, the Department declines to accept Oxford's proposed adjustment for potential savings related to the proposed merger in D.P.U. 94-157.

K. Depreciation Expense

1. Introduction

During the test year, Mass-Am booked \$251,789 in depreciation expense (Exh. MA-7, at 27 (rev.)). The Company applied a composite depreciation rate of 1.5 percent for all of its depreciable plant, with the exception of a 20 percent rate applied to \$42,664 in computer software (id.). By applying its depreciation rates to its proposed utility plant in service as represented by year-end depreciable plant and pro forma additions, less land and gross contributed property, Mass-Am has proposed an increase of \$75,818 to test year depreciation expense (Exhs. MA-6, at 16; MA-7, at 27 (rev.)).

2. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull assert that depreciation expense represents the accumulation of funds intended to replace property at the end of its useful life (Joint Intervenor Brief at 25,

[75] We distinguish our findings here from those in D.P.U. 93-60, at 39-40. In that case, the Attorney General's proposal was based on known and measurable savings to meter reading expense that had been accrued as a result of that company's ongoing conversion to an automated meter reading system.

D.P.U. 95-118

Page 132

citing Dover Water Company, D.P.U. 18365, at 8 (1976)). Hingham and Hull state that because ratepayers have already compensated the Company for the cost of its assets through the inclusion of depreciation expense in rates, ratepayers should not be required to pay again for this plant through their rates (Joint Intervenor Brief at 25).

b. Oxford

Oxford contends that because the Company seeks to recover the costs associated with its Accord Pond, Fulling Mill, and off-site piping projects from both Service Area A and Service Area B, customers in Service Area B will be required to pay the costs associated with plant assets that are intended to serve only Service Area A (Oxford Brief at 34). To remedy this disparity in rates, Oxford proposes that the annual depreciation expense associated with Accord Pond, Fulling Mill, and off-site piping, be removed from base rates and added to the proposed Service Area A surcharge (id. at 5).

c. Company

The Company contends that it has treated its depreciation expense in accordance with Department ratemaking standards and precedent (Company Reply Brief at 17). Mass-Am maintains that its deduction of accumulated depreciation from its rate base calculation ensures that it earns a return only on undepreciated plant (id.).

3. Analysis and Findings

The Department infers that Hingham and Hull seek to ensure

that the Company is not double-collecting its depreciation expense. The Department notes that while depreciation may provide funds necessary for plant replacement, its primary purpose is to permit a utility to recover the capital it has invested in plant and equipment necessary to provide service to customers. D.P.U. 1590, at 22-23. The Department calculates a utility's rate base using net

D.P.U. 95-118

Page 133

depreciated plant. Astro Water Supply, D.P.U. 88-27, at 17-18 (1988); Arthur H. Hebert, D.P.U. 17632, at 5 (1973). Accordingly, we find Hingham and Hull's concerns are addressed by this treatment.

With respect to Oxford's proposed treatment of depreciation expense associated with the Accord pumping station, Fulling Mill pumping station, and off-site piping, the Department has addressed this issue in Section VI.F.1.c, above.

With respect to the additional depreciation expense, consistent with our findings on Mass-Am's rate base, the Department finds that the Company's depreciable utility plant excluding computer software is \$23,924,229, and that its depreciable computer software is \$42,664. Application of the respective depreciation accrual rates to these balances, less \$52,128 in depreciation taken on contributed property, produces a depreciation expense of \$315,268. Accordingly, the Company's proposed depreciation expense shall be reduced by \$12,339.

L. Income Taxes

1. Income Tax Rates

a. Company Proposal

The Company proposed to calculate federal income taxes and deferred federal income taxes associated with depreciation using a 35 percent federal income tax rate (Exh. MA-7, at 31-32). The Company stated that as a subsidiary of AWW, Mass-Am does not file an individual Form 1120 for Corporate Federal Income Taxes (Exh. DPU-161). The Company stated that it contributes to AWW at a 35 percent federal income tax rate[76] and seeks to

[76] The thirty-five percent federal income tax rate applies to companies with taxable income in excess of \$10,000,000.

D.P.U. 95-118

Page 134

recover in rates the amount it actually pays for federal income taxes (id.).

b. Positions of the Parties

None of the parties. addressed this issue on brief.

c. Analysis and Findings

The Department calculates taxes on a "stand-alone" basis for utilities, including those that are part of a system. Massachusetts Electric Company, D.P.U. 89-194-C/195-A, at 66 (1989). The appropriate tax rate for Mass-Am on a stand-alone basis is 34 percent. The Department has also determined that a company's individual pro forma income tax rate is the appropriate tax rate to apply when determining the provision for deferred income taxes. D.P.U. 86-172, at 26-27. Therefore, the Department will use the 34 percent federal income tax rate in calculating pro forma income tax

expense and deferred income tax-depreciation.

2. Deferred Income Taxes

During the test year, the Company booked \$463,543 in deferred income taxes (Exh. MA-7, at 32 (rev.)). The Company proposed to decrease this expense by \$316,952 based on its proposed depreciation expense and income tax rates, producing a total deferred income tax expense of \$146,591 (id.). Consistent with our findings in Section VI.K.3 and VI.L.1.c, above, the Department finds that the appropriate level of deferred income taxes is \$147,803, for a decrease to test year cost of service of \$315,740. D.P.U. 89-67, at 11-12; D.P.U. 84-32, at 25-26. Accordingly, the Company's proposed cost of service shall be increased by \$1,212. A corresponding increase shall be applied to the Company's income taxes as well.

D.P.U. 95-118

Page 135

3. Amortization of Excess Deferred Income Taxes

The Company did not include an amount for amortization of excess deferred income taxes in its filing but states that a credit of \$2,602 should have been included for the amortization of excess deferred income taxes (Exh. DPU-163). Therefore the Department will deduct \$2,602 from expenses and include a deduction of \$2,602 in the income tax calculation.

M. Uncollectible Expense

1. Introduction

During the test year, Mass-Am booked \$3,611 to its uncollectible expense account (Exh. MA-7, at 35 (rev.)). The Company proposes: (1) to increase this amount by \$3,856 to produce a pro forma level of uncollectible expense at present rates; and (2) to increase the test year amount by an additional \$2,239 to reflect a pro forma level of uncollectible expense attributable to the revenue increase requested in this proceeding, for a total increase of \$6,095 (id.). The \$3,856 was calculated by taking a three-year average of the Company's net write-offs as a percent of total revenues for the corresponding periods, or 0.129 percent, and multiplying this percentage by pro forma test year revenues to produce a proposed bad debt expense of \$7,467 (id.). The \$2,239 was calculated by taking the same 0.129 percent and multiplying it by the proposed revenue increase of \$1,733,471 (id.).

2. Position of the Parties

None of the parties addressed this issue on brief.

3. Analysis and Findings

Because the total revenue requirement established by this Order differs from the Company's proposed revenue requirement, the Department has recalculated the uncollectible

D.P.U. 95-118

Page 136

expense adjustment in accordance with established precedent. See D.P.U. 88-170, at 27-29. The resultant total uncollectible expense is \$9,227. Accordingly, the Company's proposed cost of service shall be decreased by \$479.

N. Office Rent

1. Introduction

During the test year, Mass-Am booked approximately \$221,000 in rental expense associated with its offices at 75 Sargent William B. Terry Drive, Hingham ("75 Terry Drive") (Tr. 9, at 23). Of this

amount, approximately \$178,000 represents basic rent, with the remaining balance consisting of maintenance and \$12,500 in property tax expenses (Exh. MA-7, at 28 (rev.); Tr. 9, at 27). The Company stated that it renegotiated the lease several years ago to maintain the rent at then-current levels (Tr. 9, at 23). Mass-Am reported that between 15 to 20 employees, including nine AWW Service employees, are based at 75 Terry Drive (id. at 24-25; 28). In addition, Mass-Am stated that approximately eight employees of an affiliate in Port Chester, New York devote a portion of their time providing the Company with customer service functions (id. at 24). The Company does not allocate any portion of expenses associated with 75 Terry Drive to its affiliates (id. at 23-24).

2. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull maintain that it is "unconscionable" to require the Company's ratepayers to cover the entire cost associated with 75 Terry Drive (Joint Intervenor Brief at 4). Hingham and Hull further contend that the Company's arrangement is an example of why the Department has maintained a policy of closely examining affiliate transactions (id. at 4-5, citing D.P.U. 88-172, at 26; D.P.U. 88-171, at 16-17. Hingham and Hull state that

D.P.U. 95-118

Page 137

the Company has failed to meet its burden of proof that Mass-Am's office arrangements result in equitable treatment for its ratepayers. Hingham and Hull also state that the expenses charged to each of AWW's operating subsidiaries must be examined on a case-by-case basis (Joint Intervenor Reply Brief at 17).

Hingham and Hull state that 74 percent of employees' duties relate to affiliated companies (Joint Intervenor Brief at 4). Hingham and Hull base this assertion on the number of Mass-Am employees working at 75 Terry Drive and the percentage of time spent by AWW Service employees on Mass-Am activities (id.). Hingham and Hull advocate a revised office rent adjustment as well as a refund to customers for "overcharges" incurred as a result of subsidizing AWW Service employees for non-Company activities (Joint Intervenor Brief at 5).

b. Company

According to the Company, it does not allocate a portion of the rent to other AWW affiliates in the New England Region, because an equivalent number of employees based in the Port Chester, New York office of NY-Am provide services to the Company (Company Brief at 62). Mass-Am contends that if it were to allocate a portion of 75 Terry Drive to its affiliates, an additional increase would be required to cover the cost of office space in Port Chester, New York used to provide services to the Company (id.). Mass-Am maintains that, given the relatively low rental rate for 75 Terry Drive in comparison to the New York rental market, a net increase would result for its customers (id. at 62-63; Company Reply Brief at 2-3). The Company states that the record does not contain sufficient information to make the allocations requested by the intervenors (Company Brief at 63). Mass-Am opines that an appropriate allocation method can be developed as part of the Department's

D.P.U. 95-118

Page 138

investigation of Mass-Am's merger petition in D.P.U. 94-157 (id.; Company Reply Brief at 3-4).

With respect to the intervenors' argument of "overcharges" for 75 Terry Drive, the Company contends that its current rates incorporate the lease expense for this property (Company Reply Brief at 4). Mass-Am contends that since the Department approved the inclusion of the entire portion of 75 Terry Drive's rent in cost of service as part of D.P.U. 90-146, the proposed refund would constitute retroactive ratemaking (id.).

3. Analysis and Findings

The Department has stated in numerous decisions that the operating expenses of those companies engaged in affiliate transactions will be subject to a greater level of scrutiny than would be the case if the utility dealt with all parties at arms'

length. D.P.U. 88-170, at 21; D.P.U. 85-137, at 49-52; D.P.U. 1590, at 15. Although the operating companies in AWW's New England Region rely on Mass-Am for billing and accounting functions, the Company has failed to allocate any of these related facilities to its affiliates. Although Mass-Am asserted that its ratepayers benefit from the difference in rent charged at the Hingham and Port Chester offices, the record contains no evidence with respect to the rent charged for the Port Chester office space. Accordingly, the Department finds that the Company has failed to substantiate its claim that its ratepayers receive benefits from the present allocation method used for 75 Terry Drive.

We disagree with the Company's suggestion that D.P.U. 90-146 was dispositive of the lease expense for 75 Terry Drive. The Department notes that D.P.U. 90-146 constituted the approval of a settlement reached by several of the parties in that proceeding. Revenue requirement schedules attached to a settlement agreement carry no precedential weight.

D.P.U. 95-118

Page 139

Barnstable Water Company, D.P.U. 91-189, at 6 n.3 (1992); Dover Water Company, D.P.U. 90-86, at 4 (1986). Settlement differs fundamentally from adjudication in that a settlement may be founded on a less-than-full record or may achieve results that would differ from those reached through adjudication. Housatonic Water Works Company, D.P.U. 90-284, at 3, Interlocutory Order on Appeal (August 27, 1991). No matter how well-supported a settlement may be, it would be inappropriate to rely on outcomes reached in settlement discussions as precedent in future proceedings. The Department also notes that the settlement agreement in D.P.U. 90-146 predated the corporate reorganization of AWW's New England Region. Accordingly, the Department finds no merit to the Company's argument.

The Department has expressed its preference for the use of percentage square-footage allocators to allocate office facilities between utility and non-utility operations but has accepted the use of labor allocators if the record does not support the derivation of a square-footage allocator. Berkshire Gas Company, D.P.U. 92-210, at 11-12 (1993). Because the record in the present case is insufficient to determine either a square-footage allocator or labor allocator, the Department finds that the use of employee numbers would constitute a reasonable proxy for a labor allocator for purposes of this proceeding.

The Company has represented that between 15 and 20 personnel, including AWW Service employees, are based at 75 Terry Drive. The

Department recognizes that all of Mass-Am's employees, including field personnel based in Service Area B, rely at least to some extent on the facilities at 75 Terry Drive. The Department also takes note of the fact that the customer service function performed by NY-Am is not charged to the Company, and that an allocator based exclusively on personnel physically based at 75 Terry Drive may

D.P.U. 95-118

Page 140

serve to penalize the Company by overstating the allocation of

office space to Mass-Am's affiliates. In view of these considerations, the Department finds it appropriate to apportion the rent associated with 75 Terry Drive using a numerator equal to the number of AWW Service employees located there and a denominator equal to the sum of the 41 total Company employees and nine AWW Service employees, or 50.

The nine AWW Service employees thus constitute 18 percent (9 + 50) of total personnel using 75 Terry Drive. Because 26.12 percent of AWW Service time is allocated to Mass-Am, the Department finds that 13.30-percent (18 percent * 73.88 percent) of total personnel time is devoted to other AWW affiliates. Therefore, the Department finds that 13.30 percent of the total rent and operating expense associated with 75 Terry Drive of \$221,000, or \$29,393, is more appropriately allocated to non-Company operations. Accordingly, the Company's proposed cost of service shall be reduced by \$29,393. A concordant reduction to property taxes of \$1,633 ($\$12,500 * .133$) is also necessary.

The allocation method derived above is not intended to be used as general precedent; it is based on the specific facts of this proceeding. We expect the Company will address the issue of interstate allocation as part of either the pending merger case or in its next rate case, whichever proceeds first.

O. Sale of Office Building

1. Introduction

When Mass-Am moved to its present offices in 1990, its previous office building at 28 South Street, Hingham, was retired and transferred to non-utility property (Tr. 8, at 56). The structure and associated and had a combined book value of \$79,892, and the

D.P.U. 95-118

Page 141

building had been fully depreciated (Exh. DPU-117; Tr. 8, at 56). [77] In April of 1993, the Company sold the 28 South Street property to an unaffiliated realty trust (Exh. DPU-116; Tr. 8, at 42-43; RR-Oxford-3). The Company realized gross proceeds of \$216,500 on the sale, which produced a net gain of \$184,782 after the Company paid \$35,449 for costs associated with the sale (Exh. DPU-117; RR-Oxford-3). Mass-Am paid \$72,481 in state and federal income taxes arising from the sale (Exh. DPU-117). The Company made no adjustment to its cost of service for the transaction (Exh. MA-7).

2. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull advocate that the Department maintain its traditional ratemaking treatment for gains on the sale of property and require the Company to pass back the entire gain on the sale of 28 South Street to ratepayers (Joint Intervenor Reply Brief at 16).

They argue that the Company needs no incentive to maximize proceeds on the sale of surplus assets and that it would be contrary to Mass-Am's obligation to operate in an efficient and prudent manner (id.).

While Hingham and Hull do not propose a specific passback period, they urge the Department to apply as short an amortization period as possible in order to provide rate relief to customers (id.). They suggest that, because the property had been used for the benefit of Service Area A customers longer than for Service Area B customers, consideration should be given to requiring the greater part of the gain to be passed back to ratepayers in Service Area A (id. at 16-17).

[77] The original book value of the building was \$78,504, and the original book value of the associated land was \$1,388 (Exh. DPU-117).

D.P.U. 95-118

Page 142

b. Company

The Company maintains that it should not be required to pass back any gain on the sale of 28 South Street (Company Brief at 58-59). Mass-Am reasons that the proceeds were reinvested in other assets providing service to ratepayers (id.). According to Mass-Am, an order of a passback on the gain would leave no incentive to maximize proceeds from the sale of surplus assets for the benefit of customers (id. at 59).

Mass-Am proposes that, if the Department finds a passback is appropriate, the gain should be apportioned on a 50:50 basis between ratepayers and the Company, with the ratepayers' portion treated as a reduction to rate base (Company Brief at 59-60, citing California Water Company, 155 P.U.R. 4th 417, 427 (1994)). If the Department rejects the proposed sharing mechanism and mandates a full passback through cost of service, Mass-Am states that a five-year amortization period would be consistent with precedent (Company Brief at 60, citing Commonwealth Electric Company, D.P.U. 88-135/151, at 94 (1989)).

3. Analysis and Findings

The Department's long-standing policy with respect to gains on the sale of utility property has been to require the return to ratepayers of the entire gain associated with the sale. D.P.U. 88-135/151, at 92; D.P.U. 1100, at 62-65. If utility assets are recorded above-the-line, ratepayers support those assets through the utility's allowed rate of return. Therefore, if the property is later sold by the utility, an adjustment is necessary to pass back to ratepayers the appreciation on assets that they have supported as reflected by a return on the investment. Barnstable Water Company, D.P.U. 92-223-B at 12-13 (1994); D.P.U. 88-135/151, at 92. The Department has noted its willingness to consider well-reasoned arguments on modifying this policy in the context of a future, fully-litigated

D.P.U. 95-118

Page 143

rate case. D.P.U. 93-223-B at 13, n.7.

In the case of property sold prior to the test year used in a

rate proceeding, the Department has found that the ratemaking

treatment of gains or losses associated with a property transfer are not dependent upon the timing of the transfer relative to the test year. D.P.U. 95-92, at 30; D.P.U. 88-135/151, at 92.

Although the Uniform System of Accounts for Water Companies does not prescribe the accounting treatment to be accorded gains or losses on property transactions, the Department finds the treatment accorded to such gains or losses for gas and electric companies to be instructive. See D.P.U. 93-223-B at 13. The Department has found that the gain or loss associated with property sales should be flowed back to ratepayers, unless the proceeds were credited to accumulated depreciation as positive salvage. D.P.U. 1270/1414, at 11; Eastern Edison Company, D.P.U. 837/968, at 37 (1982).

In the present case, the proceeds on the sale of 28 South Street were booked to Account 566, Miscellaneous Non-Operating Income (1993 Annual Return at 301). The Company and its shareholder have fully recovered their investment in 28 South Street through both depreciation and a return component arising from the previous inclusion of the office in rate base. The Company is not entitled to any additional return as a result of the property's subsequent sale. To hold otherwise would be to find that a regulated utility may speculate in utility property and may also accumulate a windfall through its sale, despite earning a reasonable return on its investment in that property. D.P.U. 1100, at 62-65.

The Department notes that the Company's proposal for sharing gains between ratepayers and shareholders was first raised on brief and is not supported by the record. Accordingly, the Department declines to adopt Mass-Am's proposed sharing mechanism.

D.P.U. 95-118

Page 144

The Department finds no basis for Hingham and Hull's proposal to apportion a larger share of the gain to Service Area A. To do so would require the Department and Company to track specific benefits from specific operations purportedly identified with individual service areas. The transaction costs necessary to identify and apportion the benefits, as well as costs, associated with Company transactions would not be cost-effective and would serve to frustrate the Department's cost allocation and ratemaking principles. Accordingly, the Department finds that the gain on the sale of 28 South Street should be passed back equally to all of Mass-Am's ratepayers.

The Department finds that a five-year amortization of the after-tax gain of \$112,301 (\$184,782-\$72,401) is appropriate. Accordingly, the Company's test year cost of service shall be reduced by \$22,460.

P. Charitable Contributions

1. Introduction

During the test year, the Company booked \$435 in charitable contributions (Exh. MA-116) .

2. Positions of the Parties

None of the parties addressed this issue on brief.

3. Analysis and Findings

The Department has found that charitable contributions can only be included in cost of service on the showing that the expense

is directly connected with the provision of utility service. D.P.U. 88-170, at 30; D.P.U. 88-135/151, at 46-48 (1989); Boston Gas

Company, D.P.U. 88-67, Phase One at 112-113 (1988). The Department finds that Mass-Am has not made the required showing. Accordingly, the Company's cost of service shall be reduced by

D.P.U. 95-118

Page 145

\$435.

Q. Treatment Facility Operating Costs

1. Introduction

Mass-Am's rate request includes \$780,864 in projected additional operating expenses which it expects to incur once the WTP becomes operational (Exh. MA-7, at 26 (rev.)). The additional operating costs which make up the request include: \$408,576 for personal property and real estate taxes; \$64,810 for heating and air conditioning; \$70,500 for the costs of additional chemicals; \$58,824 for electric power costs of additional pumping; \$32,533 for electric power costs for additional non-pumping operations; and \$145,621 for waste handling costs (id.). The Company determined the property tax component by applying a tax rate of \$16.80 per thousand to the \$24,320,000 estimated assessed value of the WTP (Exh. MA-7, at 26 (rev.)). The Company applied a tax rate of \$15.97 per thousand to its other property in Hingham (id. at 28 (rev.)).

Since actual operating cost information is not available for the WTP, the Company calculated these projections by transferring cost experience from similar facilities and adjusting for inflation to represent the first year of additional operating costs for the WTP (Exh. MA-8, at 17-22). These additional operating costs are presented as amounts which Mass-Am represents are "over and above those costs reflected in the base case" for the same operating expense items (Exh. MA-6, at 15). In addition, the Company is proposing that these "additional operating costs" be borne by only Service Area A ratepayers since they are the customers who derive benefit from the new WTP (id.).

D.P.U. 95-118

Page 146

2. Position of the Parties

a. Hingham

Hingham disagrees with Hull's proposal that ratepayers in Hingham absorb WTP-related costs purportedly incurred for aesthetic or environmental reasons (Hingham Brief at 4). Such an approach would, according to Hingham, require the Department to extend itself well beyond its jurisdiction into the role played by local government bodies, thus undermining the ability of those agencies to fulfill their proper role (id.). Moreover, Hingham warns that allowing separate rates for separate communities would wreak havoc on cost allocations processes by requiring individual determinations on which customer or group of customers benefited from each component of rate base (id. 4-5).

b. Hull

Hull argues that all of the operating costs associated with the WTP that are attributable to and arising from mandates from Hingham should not be borne by non-Hingham customers in Service Area A (Hull Brief at 11). Hull states that an allocation of these costs between Hingham and non-Hingham customers could be done on a volumetric basis using the customer and consumption data provided he Company (id. citing Exh. Hull-3, at 16-17; MA-137, MA-138; MA-141).

c. Cohasset

Cohasset maintains that the WTP will have significantly higher operating costs as a result of the demands made by Hingham in the permitting process (Cohasset Brief at 7). In view of this, Cohasset argues that these additional operating costs should be imposed solely on customers in Hingham (id.)

D.P.U. 95-118

Page 147

d. Company

The Company maintains that there is no foundation for establishing a two-tier surcharge structure for Hingham and non-Hingham customers (Company Brief at 43). The Company contends that geographic boundaries have no bearing upon the quality and level of benefits accruing to ratepayers by the WTP (Company Reply Brief at 44-45). Mass-Am points out that the Department has previously included in cost of service expenses not necessary for the provision of utility service but rather associated with aesthetics or meeting regulatory requirements (Company Brief at 43-44, citing D.P.U. 88-67, Phase One at 133; Western Massachusetts Electric Company, D.P.U. 20279, at 8 (1980)). Notwithstanding its objection, the Company states it would not oppose a revenue-neutral differentiated surcharge tariff that apportions a greater share of operating costs to Hingham customers (Company Reply Brief at 50).

3. Analysis and Findings

The Department recognizes that the WTP presents an extraordinary post-test year change in the Company's operation and warrants an adjustment in this case. D.P.U. 88-172, at 17-18. In addition, the Department recognizes that it is necessary to reflect a representative level of annual operation expenses for the WTP. In reviewing this set of expense items, the Department recognizes that the WTP is now in operation and that Mass-Am is going to incur additional expenses associated with that operation. Mass-Am has provided the Department with reasonably comprehensive estimates of operating costs for the WTP during a full year of operation. See Section II.F.4, above. The difficulty centers on how "representative" the Company's estimates are for the additional operating costs, in the absence of actual operating experience.

D.P.U. 95-118

Page 148

The Department finds that, although the individual costs cannot be estimated with total certainty, the aggregate additional cost of operating the WTP beyond the level of operation and maintenance otherwise provided for in the base rates is likely to approximate the sum of the Company's projections. D.P.U. 85-270, at 153-157. The Department finds that, while the additional operating

expense cannot be known and measured with the degree of certainty required for inclusion in cost of service, the circumstances of this case are sufficiently extraordinary to warrant a departure from traditional ratemaking requirements so as to avoid a severe financial impact on the Company. D.P.U. 85-270, at 153-157.

The Department has addressed the Company's chemical expense in Section VI.E, above. Regarding the Company's property taxes associated with the WTP, the Department has found that the appropriate level of construction costs to be recovered through the surcharge is \$24,120,000 (\$24,320,000 - \$200,000). See Section II.F.4, above. The Department finds that this represents a

reasonable proxy for assessed valuation for tax purposes. Based on the allowed assessed value of \$24,120,000 and the most recent property tax rate in Hingham of \$15.97 per thousand, the Department finds that the appropriate property tax expense component of the WTP surcharge is \$385,196. Accordingly, the Company's proposed cost of service shall be reduced by \$23,380.

Based on the foregoing, the Department finds that the operating expense portion of the WTP surcharge shall include \$757,484. Therefore, the Company's proposed operating expense component shall be reduced by \$23,380. The Department shall address the parties' arguments regarding a two-tiered operating expense surcharge component in Section VIII.C.5.b, below.

D.P.U. 95-118

Page 149

VII. CAPITAL STRUCTURE AND RATE OF RETURN

A. Capital Structure

1. Introduction

At the end of the test year, Mass-Am's capital structure consisted of \$8,400,000 in long-term debt and \$6,311,591 in common equity (Exh. MA-7, at 34; Tr. 8, at 8-9). This represents a capital structure consisting of 57.19 percent long-term debt and 42.81 percent common equity (Exh. MA-7, at 34).

2. Positions of the Parties

None of the parties addressed the Company's capital structure on brief.

3. Analysis and Findings

The Department has reviewed the record evidence and finds that the Company's calculation of its capital structure is consistent with prior Department decisions. D.P.U. 95-92, at 31; see also, D.P.U. 1580, at 13. Accordingly, for purposes of calculating the overall cost of capital, the Department shall use a capital structure consisting of 57.19 percent debt and 42.81 percent common equity.

B. Cost of Debt

1. Introduction

The Company's debt consists of \$1,400,000 in 9.64 Percent Series General Mortgage Bonds and \$7,000,000 in 7.71 Percent Series General Mortgage Bonds (Exh. MA-7, at 34). Based on the respective ratios and effective interest rate applicable to each debt series, the Company proposed an overall cost of debt of 8.18 percent (id.).

2. Positions of the Parties

None of the parties addressed the cost of debt on brief.

D.P.U. 95-118

Page 150

3. Analysis and Findings

The Department has reviewed the record evidence and finds that the Company's calculation of its embedded cost of long-term debt is consistent with prior Department decisions. D.P.U. 92-101, at 63. Accordingly, for purposes of calculating the overall cost of capital, the Department shall use a weighted cost of debt equal to 8.18 percent.

C. Return on Common Equity

1. Company Proposal

The Company requests a 13.0 percent return on common equity ("ROE") (Exhs. MA-6, at 29; MA-7, at 36).

2. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull contend that in light of current economic conditions and earned returns for other water utilities, an ROE of 13.0 percent is unreasonable (Joint Intervenor Brief at 25). Hingham and Hull state that the Company is a monopoly providing a necessary product, and its business does not exhibit the level of risk commensurate with the proposed ROE (id. at 26). Hingham and Hull argue that the elimination of the minimum floor provisions of 220 C.M.R. s. 31.03 produces a rate of return on common equity of 9.2 percent, which is a reasonable rate (id. at 25-26).

b. Company

The Company states that its requested return of 13.0 percent is computed in accordance with the Department's optional cost of equity regulations, 220 C.M.R. s. 31.00 et seq. (Company Brief at 64, citing Exhs. MA-6, at 29; MA-7, at 36). The Company argues that if the intervenors are concerned about specific provisions of 220 C.M.R. s. 31.00, their

D.P.U. 95-118

Page 151

appropriate recourse would be to petition for modification (Company Reply Brief at 17).

3. Analysis and Findings

In Generic Cost of Equity for Water Companies, D.P.U. 85-115 (1985), the Department established an optional formula for water companies to use in establishing a requested rate of return on equity. For a utility with a capital structure with between 25 percent and 75 percent common equity, as is the case with Mass-Am, the allowed rate of return on common equity under the Department's formula is equal to the twelve-month average of three-year United States Treasury bond yields, including the interest rate published on or near to a date four months following the proposed effective date of the rates, plus three percentage points. 220 C.M.R. s. 31.03. The regulations provide for a minimum return of 13.0 percent and a maximum return of 16.0 percent. Id. Once a utility elects this method, it is deemed to have presented a prima facie case concerning the allowed return on equity and to have established a rebuttable presumption that the application of the formula results

in a fair and reasonable allowed return on equity. 220 C.M.R. s. 31.02.

The intervenors have presented no evidence to rebut the 13.0 percent ROE proposed by the Company. While Mass-Am is providing an essential service, it does not necessarily follow that the Company is insulated from risk by its monopoly status. As to the intervenors' proposal to eliminate the minimum rate provision found in 220 C.M.R. s. 31.03, the Department finds that a rate case proceeding is not the appropriate forum for proposing changes to Department regulations. Accordingly, the Department shall establish Mass-Am's ROE by application of 220 C.M.R. s. 31.00.[78]

 [78] The Department is cognizant of the relative difference between the ROE granted in this proceeding and those granted to gas and electric utilities, as well as the changes (continued. . .)

D.P.U. 95-118

Page 152

The Department's review of current and historical Treasury bond yields indicates that the Company is entitled to the established minimum rate of 13.0 percent. See Federal Reserve Statistical Release, Publication H.15(519), "Selected Interest Rates," issues dated March 6, 1995 through March 4, 1996. Accordingly, the Department finds that a rate of return on common equity of 13.0 percent is reasonable.

VIII. RATE DESIGN

A. Introduction

A utility's rate structure comprises the level and pattern of prices charged to specific customers for the use of utility service. The specific rate structure of each rate class is a function of the cost to the utility of providing service to that rate class and of the design of rates calculated to cover that cost. The Department has developed certain goals in determining the characteristics of a utility's rate structure. The Department's goals for utility rate structures are efficiency, simplicity, continuity, fairness, and earnings stability. D.P.U. 85-270, at 240; D.P.U. 85-266-A/271-A at 174 (1986); Colonial Gas Company, D.P.U. 84-94, at 66-73 (1984).

An allocated cost of service study ("COSS") is designed to allocate a company's total expenses to each of its rate classes, based on that class' responsibility for the expense. The total allocation for each class represents the cost of serving each class given the utility's level of total costs. An approved COSS represents the best estimate available to the Department of the costs to serve each rate class. D.P.U. 88-170, at 36; D.P.U. 84-94, at 69. Thus, if a

 [78] (. . . continued) in the capital markets which has taken place since 1985. The Department intends to open a proceeding on its own motion to examine the ROE method adopted under 220 C.M.R.

s. 31.00 et seq.
 D.P.U. 95-118

Page 153

COSS presented in a rate case is found to be accurate, the results of the study should, within the constraints of the Department's rate structure goals, establish the level of costs upon which the rates for each class are based.

B. Cost of Service Study

1. Introduction

In support of its proposed rates, the Company relied on a COSS based on calendar year 1989 data, ("1989 Study") which it performed as part of its previous rate case, D.P.U. 90-146, and an update based on 1994 operations ("1994 Update") (Exhs. MA-11, at 4-5, MA-166). Mass-Am reasoned that because its customer mix has not changed significantly since 1989, and since a large portion of the revenue requirement being sought in this proceeding is intended to be collected through a customer surcharge, it was unnecessary to incur the considerable expense associated with preparation of a new study (Exh. MA-172).[79] The cost of service allocation and rate design procedures used in the 1989 Study are those set forth by the American Water Works Association's Water Rates Manual M-1 (1983) ("AWWA Manual"), which uses the base-extra capacity method (Exh. MA-166, at 23).[80] The base-extra capacity method provides for the functional allocation of the cost of service between base or average day demands, and the extra capacity required to meet

maximum day and peak hour demands (id.). Under this method, costs which are assignable to average day demands are considered to be base costs. Extra capacity costs are defined as the additional costs incurred as a result of varying system load conditions and the need to

[79] Both the Company's and Hull's cost allocation witnesses agreed that a new COSS would cost between \$30,000 and \$50,000 to prepare (Tr. 8, at 102; Tr. 12, at 217).

[80] The Department hereby takes administrative notice of this publication. 220 C.M.R. s. 1.10(2).

D.P.U. 95-118

Page 154

meet water demands in excess of average day requirements (id.).

The Company examined its proposed revenue requirement in this case and a pro forma bill analysis and also evaluated the changes in customer mix and patterns of use by class between 1989 and the present (Exh. MA-11, at 8; Tr. 8, at 101). Based on the results of that analysis, Mass-Am determined that the cost of service allocations to the base-extra capacity functions would be proportionately the same as in the 1989 Study (Exh. MA-167). Therefore, the Company concluded that the 1989 Study provided a reasonable starting point for the proposed rate design, and was amenable to updating to reflect changes in customer and consumption mix (Tr. 8, at 102-103).

To incorporate the changes in customer and consumption mix that had occurred since the 1989 Study, Mass-Am prepared the 1994 Update. The 1994 Update was developed by first breaking down the revenue requirement determined in D.P.U. 90-146 by customer class (residential, commercial, industrial - large, industrial - other, public authority, and fire protection) into the functional categories of base, extra-capacity, customer, and hydrants (Exh. MA-171; Tr. 8, at 115). [81] The Company explained that after the Department approved the settlement in D.P.U. 90-146, it had revised the revenue requirement inputs of the 1989 Study to reflect the adjustments settled in that proceeding (Tr. 8, at 118-120). By applying these percentages to the total revenue requirement sought in this proceeding, the Company developed what it considered to be an appropriate breakdown of the proposed revenue requirement by customer class and function (Exh. MA-174). These resulting cost percentages for each rate class were then combined into three functional categories:

[81] While Mass-Am's metered service tariffs do not differentiate by type of customer, she Company classified customers by type to facilitate development of the COSS and for rate design purposes.

D.P.U. 95-118

Page 155

(1) volume, which constituted a combination of base and extra-capacity components; (2) customer, which included customer-related cost components; and (3) hydrants, which included

the annual revenue requirement associated with hydrant investment and maintenance (Exh. MA-174; Tr. 8, at 122).

Having calculated the respective revenue requirement dollars and percentage for each customer class, Mass-Am then adjusted the percentage factors to allow for the changes to customer mix and consumption that had occurred since the 1989 Study was completed. The Company applied two adjustment parameters; i.e., consumption and customers (Exh. MA-11, at 8). For each rate class, Mass-Am determined the change in consumption between the 1989 Study and December 1994 and applied the result as a percentage to the volume component of that class's revenue requirement (Exh. MA-174; Tr. 8, at 121). Using the same technique, the Company determined the percentage change in customers by class between the 1989 Study and December 1994 and increased the customer component of the revenue requirement by the respective factors (id. at 121-122). Because the hydrant component already included what the Company considered to be the appropriate hydrant-related charges, no adjustments were made to the revenue requirement percentage developed in the 1989 Study for this component (id.).[82]

Having made these adjustments, the Company then determined the revised percentage factors for each rate class (Exh. MA-174; Tr. 8, at 123). The results of this 1994 Update analysis are presented

below:

[82] Changes in the supply and distribution capacity component of fire protection were already reflected in the volume adjustment (Tr. 8, at 122).

D.P.U. 95-118

Page 156

Customer Classification	1989 Study	1994 Update
Residential	62.70 percent	65.00 percent
Commercial	13.79 percent	13.86 percent
Industrial - Large	4.62 percent	4.43 percent
Industrial - Other	3.13 percent	1.47 percent
Other Public Authority	2.53 percent	2.74 percent
Fire (Public/Private)	13.17 percent	12.50 percent

Exhs. MA-11, exh. SBA-1, Sch. 5; MA-166, exh. SBA-3, Sch. 1;
2. Hull Proposal

According to Hull, the 1994 Update is of questionable value for cost allocation purposes and should not be relied on by the Department for two reasons. First, Hull stated that while a prior COSS could be updated with reliable results if it were two or three years old, updated studies based on data more than eight to ten years old are probably useless (Exh. Hull-3, at 18). Hull noted that in view of the length of time that had elapsed since the preparation of the 1989 Study, changes in economic conditions, and the 1989 consolidation of the Company, the 1994 Update should not

be given any significant weight (Tr. 12, at 180, 211). Hull's witness, Mr. Russell, explained that the occurrence of significant changes in one or more prevailing conditions at the time of the previous study, such as operational procedures, customer base, and capital additions may not be fully accounted for in an updated study (Exh. Hull-3, at 18; Tr. 12, at 213-216). Mr. Russell

specifically noted that while the 1989 consolidation had taken place during the time period under review in the 1989 Study, two or three years of experience under the consolidation would be necessary to account for the full cost impact of the consolidation (Tr. 12, at 213).

D.P.U. 95-118

Page 157

Although Hull opposed the use of the 1994 Update, it evaluated the method and computation used in the 1989 Study. Hull stated that while Mass-Am's selection of the base-extra capacity method was a generally accepted approach in preparing a COSS, the 1989 Study had two shortcomings in the developed allocators (Exh. Hull-3, at 20). First, Hull proposed that \$81,819 in costs allocated to fire protection in the 1989 Study should not be attributed to Service Area A, because both Hingham and Hull owned the hydrants in those communities (id.).

Second, Hull proposed that storage facilities and related operating and maintenance ("O&M") costs should be allocated on the

basis of average day demand, versus the Company's selection of a maximum hour excess demand functional component (id.; Exh. Hull-16). Based on the results of the 1989 Study, Hull's proposal results in an allocation of 37.74 percent of storage facilities and related O&M costs to average day demand (Exh. Hull-3, at 20). According to Hull, a significant purpose of storage facilities is to control pressure and flow throughout a distribution system under average conditions, in addition to peak conditions (Exh. Hull-16; Tr. 12, at 182). Hull states that the Company's use of a maximum-day allocator fails to account for the role played by storage facilities in meeting pressure and flow requirements (Exh. Hull-16; Tr. 12, at 182).

3. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull argue that the Company's 1994 Update is not reliable for the purpose of establishing cost allocations in this case (Joint Intervenor Brief at 17-18). In support of this argument, Hingham and Hull contend that the 1994 Update constitutes only an update of several parameters in the 1989 Study and fails to meet the Department's standards

D.P.U. 95-118

Page 158

for COSS evaluation (id. at 17, citing Colonial Gas Company, D.P.U. 84-94, at 69 (1984)). In rejecting the 1989 Study, Hingham and Hull point to a Company-identified error in the 1989 Study's fire protection allocation, as well as what they consider to be more appropriate storage allocators (Joint Intervenor Brief at 17).

Hingham and Hull argue that the timing of the merger approved in Hingham Water Company, D.P.U. 89-134 (1989) relative to the test year used in the 1989 Study made it impossible for the 1989 Study to capture the cost impact of what they consider to be a major operational change (id. at 18, citing D.P.U. 90-146, Settlement Agreement at 3). Hingham and Hull contend that, for that reason, the settling parties had concerns about using the 1989 Study in the Company's last rate case, D.P.U. 90-146 (Joint Intervenor Brief at 18). Hingham and Hull maintain that the reasons for not using the 1989 Study remain as compelling as they were in 1990 (id.).[83]

b. Company

In support of the proposed cost allocation, the Company asserts that its 1989 Study and 1994 Update demonstrate that the changes that have occurred since 1989 are not sufficient to justify the expense of a completely new study (Company Brief at 65-66; Company Reply Brief at 12). Mass-Am argues that the age of a COSS does not, in and of itself, indicate its reliability, and that the effects of the 1989 merger had been considered as part of the 1994 Update (Company Reply Brief at 13). The Company contends that it would not have been cost-effective to spend the additional \$30,000 to \$50,000 which would have been necessary to prepare a new COSS (Company Brief at 66; Company Reply Brief at 13).

[83] Hingham and Hull also suggest that the Department would be justified, given the totality of this case, to disallow any rate increase because of the outdated COSS (Joint Intervenor Brief at 16-17).

D.P.U. 95-118

Page 159

With respect to Hull's proposed storage allocator, Mass-Am claims that the AWWA Manual prescribes that storage facility costs should be allocated on the basis of 90 percent to the base cost component and 10 percent to the extra-capacity component (Company Reply Brief at 11). Asserting that Hull's witness was unable to demonstrate any engineering knowledge or judgment to support its proposed deviation from the recommendations of the AWWA Manual, the Company contends that there is no basis in the record for Hull's proposed allocator (id.).

4. Analysis and Findings

a. Validity of 1989 COSS and 1994 Update

The Department has stated that an allocated COSS should be based on up-to-date information. Commonwealth Electric Company, D.P.U. 956, at 70 (1982); Boston Edison Company, D.P.U. 19991, at 69 (1979). A utility that proposes to allocate revenues based on the results of a non-current COSS must be prepared to demonstrate during the proceeding that the data are not outdated. D.P.U. 956, at 70. See also, Cambridge Electric Light Company, D.P.U. 84-165-A at 25-27 (1985).

The Company has represented that the 1994 Update renders the 1989 Study useful for allocating costs. The Department acknowledges the Company's efforts to refine the results of the 1989 Study and the considerable costs that would have been associated with developing a completely new COSS. Nevertheless, the Department is cognizant of the inherent limitations found in relying on an older COSS and the need to examine any claim of comparability. D.P.U. 956, at 70. In view of the age of the data contained in the 1989 Study and the operational changes that have occurred at Mass-Am since 1989, the Department finds it appropriate to examine the Company's assumptions.

D.P.U. 95-118

Page 160

A comparison of the customer and consumption data presented in the 1989 COSS and 1994 Update demonstrate that, with the exception of a decrease in commercial customers, there has been little change in Mass-Am's overall customer and consumption mix. Because the

Company does not have a distinctly separate commercial class and because the 1994 Update incorporates the changes in customers and consumption, the Department finds that the relative shifts in customer classes between 1989 and 1994 do not have a significant impact on the continued applicability of the 1989 Study. The Department has also examined the class average day demands, maximum day demands, and peak hour demands provided in the 1989 Study in relation to those based on 1994 data. Based on our review, the Department finds that the relationships between the various class demands for both 1989 and 1994 are not significantly different.

Therefore, the Department finds that the 1989 Study remains reasonably useful for cost allocation purposes in this proceeding. Our approval here of the use of a COSS based on 1989 data is not to be construed as a lower commitment by the Department to the preparation of reliable, up-to-date COSS, but a recognition of the (Company's size and the expense of producing a new COSS. See South Egremont Water Company, D.P.U. 86-149, at 7-8 (1986).

With respect to the 1994 Update, the Department finds that the revisions contained therein update the Company's customer and consumption components and satisfactorily resolve the issue of changes in customer and consumption mix since 1989. Accordingly, the Department finds that the Company's 1994 Update remedies a number of the concerns about the age of the data presented in the 1989 Study.

The Department has considered the impact of Mass-Am's reorganization on the functional allocations developed in the 1989 Study. Most of the changes in operating

D.P.U. 95-118

Page 161

expenses associated with the reorganization would have occurred in the area of customer accounts and among the Company's administrative and general categories. Mass-Am allocated expenses related to customer accounts to the customer function, while administrative and general expenses were allocated on the basis of other operating and maintenance expenses. To the extent that the Company's reorganization may have affected the total expense that would be assigned to the customer function, the Department finds that the impact of any changes would be flowed through the rest of the COSS and would not have a significant impact on the resulting cost allocation. Additionally, the Department notes that changes in the Company's administrative and general expenses would be apportioned on the basis of other O&M expenses and thus flow through the rest of the COSS in similar proportions to those presented in the 1989 Study.

In consideration of the relative differences between the 1989 Study and 1994 Update, the impact of Mass-Am's reorganization on cost allocation, and the expense associated with preparing a fully-allocated COSS, the Department finds that the 1989 Study and 1994 Update provide a sufficiently acceptable basis for cost allocation. In making this finding, the Department emphasizes that utilities seeking to reallocate costs among classes remain obligated to base their proposals on an up-to-date COSS. The Company is hereby directed to submit a fully-allocated COSS based on the same data as used in its selected test year, as part of its next rate case.

b. Storage Facilities Allocator

We disagree with the Company's claim that the AWWA Manual prescribes a fixed allocation between base and extra-capacity. The 90 percent extra-capacity allocation cited by Mass-Am was for illustrative purposes, as demonstrated by the following:

D.P.U. 95-118

Page 162

Distribution reservoirs, such as elevated storage tanks, serve principally to assist in meeting maximum-hour capacity requirements of the system, and are therefore, in this example, allocated 90 percent to the maximum-hour extra capacity cost component. In recognition that distribution reservoirs provide some element of system reliability, the base cost component is assigned 10 percent [in this example] of such facilities. [bracketed text added]

AWWA Manual, at 13-14.

Although engineering knowledge and judgment play a vital role in cost allocation principles, the Company's decision to allocate 100 percent of its storage facilities to the maximum-day requirement is not supported by the record. While the Department recognizes that, for at least some systems, a maximum-day allocator may be justified, the record evidence demonstrates that Mass-Am's storage facilities play a broader role in the Company's operations than just meeting peak demand requirements. In addition to peak demand concerns, two additional purposes of Mass-Am's storage facilities are pressure equalization and flow equalization. In view of this consideration, the Department finds that some portion of Mass-Am's storage facilities should be allocated to the average day demand functional component. Accordingly, the Department rejects the Company's proposed storage facility allocator.

Hull's proposed allocation of 37.74 percent of storage facilities and related O&M expenses to the average day demand functional component is derived from the Company's COSS, and takes into account the role storage plays in the Company's pressure and flow requirements. The Department finds that the average day allocator for storage and related O&M expenses is more reflective of cost causation and produces a more reliable allocation method for purposes of this proceeding. Accordingly, the Department finds that Hull's propose storage facility allocator is acceptable for purposes of this proceeding. The Department may reexamine this issue as part of Mass-Am's next rate case.

D.P.U. 95-118

Page 163

c. Allocation of Hydrant Charges to Fire Protection Service

With regard to the \$81,819 in costs allocated to fire protection service in the 1989 Study, the Department finds that this is more appropriately addressed as part of our evaluation of Mass-Am's proposed fire protection rates. See Section VIII.D, below.

d. Conclusion

The Department has recalculated the 1989 Study and 1994 Update using Hull's storage facility allocator, as found in Schedule 11, attached. The results are summarized below.

Customer Classification	Proposed	Per Order
Residential	65.00 percent	65.26 percent
Commercial	13.86 percent	13.98 percent

Industrial - Large	4.43 percent	4.55 percent
Industrial - Other	1.47 percent	1.48 percent
Other Public Authority	2.74 percent	2.77 percent
Fire (Public/Private)	12.50 percent	11.96 percent
C. Metered Rate Design		

1. Introduction

Mass-Am currently has two metered service tariffs in effect, as well as separate public and private fire protection rates. Metered customers in Service Area A are served under one tariff, and metered customers in Service Area B are served under another tariff

D.P.U. 95-118

Page 164

(Exh. MA-1, Sheet Nos. 1A and 1B). While meter charges and the third block rate are the same for Service Areas A and B, the first and second metered block rates are different (Exh. MA-11, at 6).

2. Company Proposal

a. Base Metered Rates

The Company has proposed to eliminate the difference in first and second block rates for Service Areas A and B, thereby setting a uniform system-wide metered rate (Exh. MA-2). [84] According to Mass-Am, a single tariff applying to customers in both service areas would be appropriate (Tr. 8, at 99). The Company reasoned that customers in both service areas receive similar service and enjoy the same benefits that flow from the combined finances of the consolidated systems in terms of purchasing power and access to more qualified management resources (id.). Therefore, Mass-Am concluded that it would be appropriate and reasonable to adopt single-tariff pricing (id.). Mass-Am viewed its proposal as consistent with the rate consolidations made in D.P.U. 90-146 (Exh. MA-11, at 6).

b. Surcharge Rate Design

The Company proposed to recover the lease and operating costs associated with the WTP through a two-part surcharge consisting of a surcharge of \$22.46 per month per equivalent 5/8-inch meter and a consumption charge of \$.594 per hundred cubic feet (Exh. MA-2, Sheet No. 7). Mass-Am requested that the Department allow the Company to bill the fixed portion of the surcharge to its customers on a bills-rendered basis, rather than on a service-rendered basis, because the Company's monthly rent obligation for the WTP

[84] Because meters in Service Area A rely on cubic feet as a unit of measure, and meters in Service Area B use gallonage, the uniform rates have been adjusted to take this into account (Tr. 8, at 100).

D.P.U. 95-118

Page 165

becomes due in June of 1996 (Tr. 9, at 140). The lease component of the surcharge was determined by dividing the annual lease expense by the number of equivalent 5/8-inch meters in Service Area A (Exh. MA-11, at 7-8). The operating expense component of the surcharge was determined by dividing the annual lease expense by test year metered consumption in Service Area A (id., at 7).

In support of its proposed surcharge design, the Company testified that customers with larger meters had the potential to place a greater demand on the system than did customers with smaller meters and thus should be willing to bear the cost of that available capacity (Tr. 8, at 139, 142-143). Mass-Am also noted that, to the extent that fixed expenses were recovered through a variable portion of the surcharge, the Company would be placed at risk for recovery of its fixed lease costs (id., at 140-141).

Under the Company's lease agreement, the percentage rent component contains an escalator provision (Exh. MA-10, at 18). In order to recover this annual increase, Mass-Am proposed that a step adjustment provision be incorporated into the tariff (Exh. MA-7, at 26A (rev.); Tr. 8, at 10). Under its proposal, the Company would increase the surcharge tariff each year to recover the incremental increases provided for in the Facility Lease (Tr. 8, at 10).

3. Hull Proposal

Hull disputed the feasibility of further movement to a single tariff rate in this proceeding (Exh. Hull-3, at 18; Tr. 12, at 76-77). Citing the magnitude of the overall rate increase to customers in Service Area A in comparison to customers in Service Area B and the deficiencies in the Company's COSS, Hull concluded that an equal percentage increase to metered customers would be the more appropriate method to allocate any rate increase

D.P.U. 95-118

Page 166

(Exh. Hull-3, at 18-19; Tr. 12, at 180-181).

With regard to the proposed WTP surcharge, Hull contended that

a portion of the total capital costs of the WTP, as well as the property taxes associated with the facilities, resulted either from imprudent Company actions or through conditions imposed by Hingham (Exh. Hull-3, at 15-16). Hull proposed that, to the extent the Department finds that capital costs or property taxes associated with the WTP were imprudently incurred or resulted from Hingham's permitting requirements, these extra costs should not be attributed to non-Hingham ratepayers but recovered exclusively from customers in Hingham (id. at 16-17).

Hull also opposed the Company's proposal to recover the WTP lease costs solely on a per-equivalent meter basis (id. at 13). According to Hull, Mass-Am erroneously assumed that meter size serves as a proxy for demand. Hull contended that, while the design capacity of the WTP is a function of total system demand, many of the processes and sub-systems are designed for average load conditions (id. at 14). Similarly, Hull noted that while average meter size is correlated to customer demand, there is considerable variation in customer demands within and between meter sizes (id.). Moreover, Hull asserted that the Company's proposed surcharge structure results in fixed charges representing well over 50 percent of a customer's total bill (Tr. 12, at 199). Hull contended that, by placing 100 percent of the Facility Lease cost in a fixed component, customers would find it impossible to effect significant overall bill reductions through lower demand resulting from conservation (Exh. Hull-3, at 14-15). This, according to Hull, is

contrary to the Department's economic efficiency criteria, general conservation principles, and basic consumer protection (id. at 15).

D.P.U. 95-118

Page 167

As a solution, Hull proposed that the surcharge be designed so that a maximum of only 25 percent, versus 100 percent, of the Facility Lease expense be incorporated into the fixed component of the surcharge (Exh. Hull-3, at 15; Tr. 12, at 159). Under this approach, according to Hull, customers would have a greater ability to control their total bills through changes in use (Tr. 12, at 190).

4. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull oppose any movement in this proceeding towards single-tariff pricing. They contend that with the anticipated rate shock in Service Area A, it would be inappropriate to engage in further cost-shifting (Joint Intervenor Brief at 23-24). Furthermore, Hingham and Hull reason that because the Company's COSS is flawed, there is no basis on which to redesign rates (id. at 24).

Hingham and Hull defend Mr. Russell's qualifications as an expert witness by citing his education, training, and experience (Joint Intervenor Reply Brief at 23-25). Addressing the proposed surcharge rate design, they argue that the Company has taken Exhibit MA-192 out of context and note that the focus of the article was on conservation-based charges for water service (id. at 26-28). Hingham and Hull contend that the Company itself admitted that the use of a extra capacity/maximum-day allocator, as was used to allocate treatment facility costs in the COSS and to allocate the Facility Lease payments between fixed and variable lease components, would not be inappropriate (id. at 28-29, citing Tr. 8, at 188-190). Claiming that this allocation method produces an approximate 51 percent allocation to consumption and 49 percent to demand-related functions, Hingham and Hull contend that even this allocation would be superior to the 100 percent fixed component

D.P.U. 95-118

Page 168

proposed by Mass-Am (Joint Intervenor Reply Brief at 29).

b. Hull

Hull asserts that the record evidence supports a finding of imprudence by Mass-Am relative to the WTP and presents in its separate brief an alternative approach towards apportioning any surcharge granted by this Order. Hull determined that about \$10 million, or about 25 percent of total project costs, were attributable to design changes for aesthetic or environmental reasons (Hull Brief at 2-7). Hull proposes that, to the extent the Department finds that any increases in costs were the result of conditions imposed by Hingham, the surcharge should be structured so that only customers in Hingham are responsible for those costs (id. at 2). In support of its proposal, Hull notes that Massachusetts Electric Company has a tariff provision whereby

customers in communities requiring underground distribution service pursuant to G.L. c. 166, s. 22C are required to pay a surcharge to cover the incremental cost of the increased expense (Hull Brief at 4 citing Massachusetts Electric Company tariff M.D.P.U. 308).

Hull proposes that the rate differential between Hingham and non-Hingham customers be computed on a volumetric allocation (id. at 11). Hull states that the record contains the customer and consumption data necessary for such a calculation (id. at 11-12, citing Exhs. Hull-3, at 16-17; MA-137; MA-138; MA-141).

Hull draws particular attention to the circumstances of Dr. Reimold's conversations with the Hingham ZBA which led to the granting of the permit, as memorialized in Exhibit DPU-21[85] (Hull Brief at 8-9, citing Exh. DPU-21). While ostensibly prepared as a listing of

 [85] This exhibit identifies issues of concern to both the Hingham ZBA and Planning Board, describes the substance of certain conversations between a Hingham ZBA (continued. . .)

D.P.U. 95-118

Page 169

those concerns, Hull contends that the conversation constituted ex parte communication with a Hingham ZBA member (Hull Brief at 8). Hull contends that these informal lines of communication diminished the opportunity of the public and ratepayers, particularly those outside of Hingham, to participate in the permitting process (id. at 9).

c. Hingham

Hingham contends that, contrary to suggestions made during the proceedings by Hull, its local boards never mandated any requirements on the Company in the permitting process regarding the WTP (Hingham Brief at 2-3). According to Hingham, neighborhood concerns raised during permitting hearings were legitimate; Hingham points to the role played by local town boards, such as the Conservation Commission, Board of Health, Hingham ZBA, and Planning Board, in ensuring that an abundant supply of potable water remains available to the Company's customers (id. at 3, 6-7). Hingham argues that the Company failed to negotiate with the affected parties to strike a fair balance between well-founded concerns and its own need to control costs, and chose instead to make sweeping design changes without regard to cost (id. at 3). Hingham maintains that the onus of these higher costs rests with the Company's shareholders and not its customers (id. at 4).

For the same reasons stated on brief regarding the allocation of the WTP's operating costs between Hingham and non-Hingham customers, Hingham opposes the imposition of a two-tiered surcharge structure as an intrusion by the Department into local affairs, undermining the ability of those agencies to fulfill their proper role (id.). Moreover,

 [85] (. . .continued) member and opponent of the WTP, and

discussions between Dr. Reimold and the Hingham ZBA member about Mass-Am's contemplated design modifications (Exh. DPU-21).

D.P.U. 95-118

Page 170

Hingham contends that allowing separate rates for separate communities would create unwieldy cost allocations processes by requiring individual determinations on which customer or group of customers benefited from each component of rate base (id. at 4-5). Stating that while a permitting process represents a general cost that benefits all ratepayers, a requirement for underground distribution lines within a community benefits only customers within that community, Hingham distinguishes this proceeding from the situation presented by G.L. c. 166, s. 22C (id. at 5).

d. Cohasset

Cohasset states that the Company had itemized approximately \$11 million in additional construction costs which were attributable to Hingham's permitting requirements (Cohasset Brief at 5-6, citing Exh. MA-25; Tr. 1, at 51-52). Citing the exchange of communications between Dr. Reimold and the Hingham ZBA, Cohasset maintains that this lends further credence to the contention that Hingham's permitting requirements were the direct cause of the increased project costs (Cohasset Brief at 6, citing Exh. DPU-21). Reasoning that these modifications were purely for the aesthetic benefit of Hingham residents and to produce additional tax revenues for Hingham, Cohasset argues that its residents are not responsible for the additional costs imposed by Hingham (Cohasset Brief at 6-7).

With respect to the surcharge rate design, Cohasset supports Hull's proposal for recovering a portion of capital costs associated with the WTP through a volumetric, versus fixed, rate component (id. at 9). Cohasset argues that the potential rate shock for Service Area A customers could so alienate consumers such that they would have no incentive to conserve (id.). Cohasset represents that a surcharge which provided for volumetric recovery of some capital costs could give customers control over their total bill, thereby mitigating

D.P.U. 95-118

Page 171

any potential adverse effects (id.).

e. Company

Mass-Am contends that a move to single-tariff pricing would be appropriate in this proceeding (Company Brief at 65). The Company maintains that its operations in Service Area A and Service Area B are similar in many respects, including management, supervision, service standards, financial resources, purchasing, accounting, and financial operations (id. at 65; Company Reply Brief at 16). The Company notes that the only current differences between rates in Service Area A and Service Area B are public fire protection and the first and second metered rate blocks and suggests that single-tariff pricing could be readily adopted (Company Brief at 65).

The Company maintains that there is no foundation for establishing a two-tier surcharge structure (id. at 43). The Company contends that geographic boundaries have no bearing upon the quality and level of benefits accruing to ratepayers by the WTP (Company Reply Brief at 44-45). Mass-Am points out that the Department has previously included in cost of service expenses not necessary for the provision of utility service but rather associated with aesthetics or meeting regulatory requirements (Company Brief at 43-44, citing D.P.U. 88-67, Phase One at 133; D.P.U. 20279, at 8). Notwithstanding its objection, the Company states it would not oppose a revenue-neutral differentiated surcharge tariff which apportions a greater share of costs to Hingham customers (Company Reply Brief at 50).

With respect to Hull's proposed surcharge rate design, Mass-Am argues that Mr. Russell's testimony contradicts his previous works, in which he cites the capital requirements of the SDWA as warranting the development of water rate structures which rely more

D.P.U. 95-118

Page 172

heavily on fixed charges (Company Brief at 44, citing Exh. MA-192). The Company argues that the conclusions Mr. Russell reached in Exhibit MA-192 demonstrate the propriety of using fixed charges to design water rates (Company Brief at 45).

The Company notes that its proposed surcharge is subject to revision based on the actual cost of the project (*id.* at 58). To the extent that the plant costs are under budget, there will be excess proceeds associated with the sale of the MIFA bonds and AWW's capital contribution (*id.*). Mass-Am states that it will use the excess proceeds to redeem both the equity and debt holdings of MassCap on a pro rata basis according to the percentage of debt and equity in MassCap's capital structure (*id.*). The Company intends to file a revised Facility Lease schedule to reflect the reduction in lease costs and to flow the consequent savings to ratepayers (*id.*)

Under the Facility Lease, the Company states that the percentage rent component has an escalation clause (*id.* at 57). In order to recover the increased Facility Lease cost associated with the percentage rent component, Mass-Am proposes to file on an annual basis a revised surcharge tariff designed to recover the increased lease expense (*id.*).

5. Analysis and Findings

a. Base Metered Rates

A utility's rate structure comprises the level and pattern of prices charged to specific customers for the use of utility services. The specific rate structure of each rate class is a function of the cost to the utility of providing service to that rate class and of the design of rates calculated to cover that cost. The Department has developed certain goals in determining the characteristics of a utility's rate structure, consisting of efficiency, simplicity, continuity, fairness, and earnings stability. Salisbury Water Supply Company,

D.P.U. 95-118

Page 173

D.P.U. 87-215, at 16-17 (1988); D.P.U. 84-94, at 66-73.

The Department has previously accepted the consolidation of tariffs for multi-service area utilities. Commonwealth Gas Company, D.P.U. 1120, at 83-84 (1982); Bay State Gas Company, D.P.U. 19990, at 31 (1979). Consolidation of the Company's tariffs represents a logical continuation of its reorganization efforts, and would increase both administrative efficiency and customer understanding of the Company's rate structure. The Department has evaluated the rate impacts associated with the proposed consolidation of Service Area A and Service Area B. Although customers in Service Area A, especially low- and moderate-consumption customers, would experience a slightly greater percentage impact than those in Service Area B, the Department finds that in terms of absolute dollars, the impact upon customers is small.

Accordingly, the Department approves the Company's proposal to implement single-tariff pricing. Mass-Am is hereby directed to develop its new rates by first subtracting \$34,427 in miscellaneous revenues from the non-WTP surcharge-related revenue requirement as set forth in Schedule 1 of this Order. The Company shall then reduce this net revenue - requirement by the percentage of overall revenues allocated to public and private fire protection as found appropriate in Section VIII.B.4.c of this Order to develop its new

metered service revenue requirement. The Company shall reduce its proposed metered service rates by an equal percentage, representing the difference between the metered service revenue requirement initially filed and the new metered service revenue requirement as determined herein. [86]

[86] Because the Company's proposed tariffs remain predicated on the \$1,524,818 revenue deficiency initially requested, the Department finds it unnecessary to use the revised revenue deficiency of \$1,733,471 as the basis for the adjustment.

D.P.U. 95-118

Page 174

b. Surcharge Rate Design

The Department has found that rate structures which differentiate between customers on the basis of political subdivisions are unsound. Dedham Water Company, D.P.U. 13271 at 8 (1961). A case can be made that customers living in one section of Hingham should also be held harmless for any additional costs associated with the permitting process, and that abutters should bear virtually all of these costs.

Hull's arguments on this issue miss the point; to the extent that costs are found to be imprudent, no ratepayer should bear those costs, whether they live in Hull, Cohasset, or Hingham. The Department has evaluated the Company's prudence in designing and constructing the WTP in Section II, above, and has made disallowances where appropriate. The Department finds no justification for further cost assignments between communities in Service Area A. Accordingly, the Department declines to impose a two-tiered WTP surcharge differentiating between Hingham and

non-Hingham customers.

Mass-Am has requested recovery of all payments made pursuant to the Facility Lease through a fixed charge per equivalent meter. Although the Company argues that the fixed nature of the WTP makes it necessary to recover the associated lease costs in this fashion, the same argument can be made for most other cost components of a water utility. The Department has long recognized that cost allocations for water utilities are driven by the cost of delivering water, versus the actual product. Salisbury Water Supply Company, D.P.U. 84-90, at 9 (1987). The Department further notes that the Company's proposal emphasizes earnings stability over other rate structure goals of the Department.

Placing the entire lease expense in a fixed surcharge component shifts costs to small volume users, as illustrated by the bill impacts presented by Mass-Am. The Department

D.P.U. 95-118

Page 175

finds that the Company's surcharge rate design violates our goals of continuity and fairness. Additionally, the Company's proposed rate design would, in essence, shift a significant portion of Mass-Am's financial risk to ratepayers. While shifting cost recovery of a portion of lease expense may have an effect on the Company's perceived risk in the capital markets, Mass-Am has not quantified that risk. The Department finds that the Company has not demonstrated its claimed need to incorporate all payments under the

Facility Lease into the fixed component of the surcharge. Accordingly, the Department finds it appropriate to remove a certain amount of the Facility Lease expense from the fixed portion of the surcharge.

To determine the appropriate level of Facility Lease payments to include in the fixed and variable portions of the WTP surcharge, the Department has evaluated the WTP surcharge in view of our rate design goals, with particular concern to fairness, continuity, and revenue stability. Based on our rate design goals and an analysis of the resulting bill impacts on customers, the Department finds that the WTP surcharge should consist of a per-equivalent meter component which recovers 66 percent of the Facility Lease payments, and a variable component per CCF which recovers the remaining 33 percent of the Facility Lease payments. The Company is hereby directed to submit the necessary supporting calculations for the WTP surcharge as part of its compliance filing in this case.

With respect to the Company's proposal that annual step increases be provided for as part of the WTP surcharge, Mass-Am's request constitutes, in essence, a single-issue rate proceeding which the Department generally declines to consider. Cf. Cambridge Electric Light Company, D.P.U. 490 (1981). The Company has also not demonstrated that the annual increases in its Facility Lease expense would not be mitigated by additional revenues

D.P.U. 95-118

Page 176

associated with sales growth. The Department further finds that the true-up provisions of the Facility Lease provide the Company with the opportunity to meet its payments without the need for annual step increases which, at least for the initial period of the Facility Lease, are relatively modest. The Department finds that Mass-Am has not demonstrated the need for step increases between rate cases. Accordingly, the Department rejects Mass-Am's proposal for a step increase component in its WTP surcharge. By doing so, we do not necessarily preclude our reexamination of this issue in a subsequent rate proceeding.

D. Fire Protection Rates

1. Introduction

Mass-Am's public fire protection rates are differentiated by community and consist of individual hydrant charges of \$481.11 per year in Hingham, \$485.50 per year in Millbury, and \$638.36 per year in Oxford (Exh. MA-1, Sheet No. 3). Hydrants placed into service prior to July 1, 1968 are billed at a fixed rate of \$10,105 per year for the 24 pre-1968 hydrants in Cohasset and \$122,679 per year for the 270 pre-1968 hydrants in Hull (e; Exh. MA-170). Hydrants installed after July 1, 1968 are billed in both Cohasset and Hull at a rate of \$481.11 per year (Exh. MA-1, Sheet No. 3). Private fire protection is provided under the terms of a single uniform tariff, with a rate of \$416.28 for privately-owned hydrants and other fire service connections ranging between \$277.56 and \$2,497.92 per year, depending on the size of the connection (id., Sheet No. 2).

D.P.U. 95-118

Page 177

2. Company Proposal

In its initial filing, the Company proposed to standardize its

public fire protection rates at \$599.00 per hydrant per year, except in Oxford where the rate was to remain at \$638.86 (Exh. MA-2, 1st. Rev. Sheet No. 3). Fire protection service in Cohasset and Hull would have remained subject to a demand component for hydrants installed prior to July 1, 1968 of \$12,328 per year in Cohasset and \$149,668 per year in Hull (id.).

During the hearings, the Company noted that a revision to its public fire protection rates was necessary to reflect the fact that virtually all of the hydrants in Service Area A are owned by the respective communities who also bear the responsibility for their maintenance (Tr. 8, at 95-96). Of 824 hydrants in Service Area A, the Company owns only about ten which are located on Nantasket Beach (Exh. MA-170; Tr. 8, at 125; Tr. 9, at 69). [87] The 1989 Study had been originally prepared in light of the Company's proposal in D.P.U. 90-146 to acquire direct ownership of town-owned hydrants in Hingham and Hull, but the acquisition was never carried out (Exh. MA-170; Tr. 8, at 112, 143-145). [88] To reflect properly the actual ownership status of hydrants in Service Area A, Mass-Am stated that it intended to submit a revised public fire protection proposal (Tr. 8, at 95-96).

Mass-Am submitted its revised proposal on April 19, 1996 (Exh. MA-170). The Company proposed a two-part rate consisting of a community-specific demand charge intended to cover the approximate capacity costs associated with fire service, plus a hydrant

[87] Hydrants in Millbury and Oxford are owned, with a few exceptions, by the Company (Exh. MA-170). Some hydrants in Oxford are owned by that community and classified as private fire service. See Oxford Water Company, D.P.U. 86-172, at 33 (1987).

[88] The settlement in Massachusetts-American Water Company, D.P.U. 90-146 removed the proposed adjustment from the revenue requirement calculations (Tr. 8, at 178).

D.P.U. 95-118

Page 178

charge designed to cover Mass-Am's cost associated with owning and maintaining Company-owned hydrants (id., at 7). The demand charges would not differentiate between hydrant installation dates (id.). The Company proposed demand charges of \$12,918 in Cohasset, \$276,780 in Hingham, \$154,059 in Hull, \$108,128 in Millbury, and \$77,986 in Oxford (id., Att. C at 1). A uniform hydrant charge of \$173.72 would be applied to each Company-owned hydrant (id.).

The Company's proposal also included revisions to its private fire service rates. Based on an allocation of capacity costs between public and private fire service, Mass-Am determined that 25.64 percent of the capacity costs related to fire protection should be assigned to private fire service (id., at 6). Under the Company's proposed fire protection rate, privately-owned hydrants would be charged \$540.00 per hydrant, and all other fire service connections would be charged between \$360.00 and \$3,228.00 depending upon the size of the connection (id., Att. C at 1).

3. Hull Proposal

In view of its criticisms of the Company's COSS and proposal to adopt single-tariff pricing detailed above, Hull stated that the COSS did not provide a reliable basis for redesigning Mass-Am's rates (Exh. Hull-3, at 20). Rather than require the effort and

expense of re-running the COSS to correct the purported deficiencies, Hull proposed that no increase in fire protection charges should be granted at this time (2; Tr. 12, at 180-181). Hull proposed that any revenue increase granted in this proceeding should be allocated among the Company's metered rate customers (Exh. Hull-3, at 20).

D.P.U. 95-118

Page 179

4. Positions of the Parties

a. Joint Hingham and Hull

Hingham and Hull argue that there is no rational basis for the Company's current fire protection rate structure (Joint Intervenor Brief at 14). They contend that the pre-1968 hydrant demand component is based on considerations which have become unclear over time (id.).

With respect to the 1989 Study, they argue that it does not reliably apportion costs to fire protection classes, noting that

the study had not been used to determine rates in D.P.U. 90-146, and note that the Company has overallocated storage costs to the peak demand component (id.). Hingham and Hull argue that Hull's proposed allocation method is supported by record evidence and by what they consider to be a reasonable interpretation of the AWWA Manual (id. at 15). Hingham and Hull maintain that even if their proposed storage and hydrant allocators were made they would have a small effect on fire protection charges (id. at 16). Because of the dated information contained in the 1989 Study, Hingham and Hull consider the 1994 Update to be unsuitable for determining fire protection charges (id. at 16). For these reasons, Hingham and Hull conclude that a future study would be the more appropriate vehicle to apportion fire protection costs and that no change to fire protection rates is warranted in this proceeding (id. at 16).

b. Oxford

Noting that the Company's fire protection proposal was submitted late in the proceedings, Oxford states that it has had no opportunity to review and consider fully the proposal (Oxford Brief at 7). Oxford opposes any rate redesign of its fire protection service, urges the Department to maintain the originally-proposed hydrant rate design (id.).

D.P.U. 95-118

Page 180

c. Company

Mass-Am notes that it has submitted a redesigned fire protection tariff intended to account for the differences between town- and Company-owned hydrants (Company Brief at 64; Company Reply Brief at 10). Mass-Am further argues that the 1989 COSS would be a reasonable basis for the allocation of fire protection services, and would produce a lower overall increase than would an

equal percentage across-the-board increase (Company Reply Brief at 10-11). Claiming that there is no record basis for the selected allocators and that Hull's proposal is at drastic odds with the allocation percentages recommended by the AWWA Manual, the Company disputes Hull's proposed storage facilities allocator (id. at 11).

Additionally, Mass-Am argues that Hull's objections to the Company's fire protection rates stem from a misunderstanding of the nature of fire protection service (Company Brief at 66). The

Company maintains that fire protection charges are designed to reflect the cost of having adequate capacity and pressure available for large volumes of water on short notice (id.).

5. Analysis and Findings

The Department has previously found that fire protection service rates should reflect any cost differentials resulting from private ownership of hydrants. D.P.U. 89-67, at 27; D.P.U. 88-171, at 51; D.P.U. 18070, at 4-5.

The Department notes that fire protection service cannot be provided on a purely volumetric basis. Water utility costs are heavily influenced by the cost related to the ability to deliver water, versus the cost of the product itself. D.P.U. 84-90, at 9. Fire protection service is designed to reflect the cost to a water utility associated with maintaining adequate

D.P.U. 95-118

Page 181

capacity and pressure to deliver large volumes of water at irregular intervals on demand. Therefore, fire protection service rates must be designed to take this demand requirement into account.

Taking into consideration the revisions to Mass-Am's COSS, the concerns of the intervenors, and the rate impacts associated with the proposed rates, the Department has examined the Company's revised fire protection proposal. The Department finds that the Company's proposed fire protection rate structure recognizes the demand nature of fire protection service as well as the relative cost differentials between Company-owned and municipally-owned hydrants and resolves the issue raised by Hull of the \$81,819 in revenues allocated in the 1989 Study to fire protection service. Moreover, the Department finds that the structure of the proposed lump sum charges are more related to the demands placed on Mass-Am by fire protection requirements than the current historically-based demand components. Accordingly, the Department approves of the Company's proposed fire protection rate design.

As noted in Section VIII.B.4.c, above, the Department has reallocated the total revenue requirements associated with fire protection service. Mass-Am is hereby directed to design its fire protection rates using a revenue requirement based on the cost allocation described in Section VIII.B.4.c of this Order, and the method described in Exhibit DPU-170.

IX. QUALITY OF SERVICE

A. Positions of the Parties

1. Joint Hingham and Hull

Hingham and Hull contend that the Company's responses to their quality of service problems are ineffective (Joint Intervenor Brief at 19-20). They urge the Department to tie

D.P.U. 95-118

Page 182

any increase in rates to the satisfactory resolution of ratepayers' complaints (id.).

2. Company

The Company claims that the primary cause of poor water color, poor taste, and odor reported by customers is the presence of high levels of iron and manganese in groundwater sources of supply (Company Brief at 67-68). They argue that this is common in groundwater in New England (id. at 68). Mass-Am contends that while

it has undertaken interim measures (e.g., periodic flushing and pipe scouring, chemical treatments, and replacements of small and shallow mains) to attempt to ameliorate some of the discoloration/staining concerns, the only effective long-term solution to these problems is the construction of the WTP to remove the iron and manganese from the raw water sources (id. at 68). The Company claims that the WTP will allow the Company to meet the significant water treatment requirements under the SWTR and the SDWA and to assure that its customers receive the highest quality drinking water (id.).

With respect to complaints of discoloration and lack of water pressure in Hull, the Company contends that periodic flushing and appropriate use of chemical treatments are sufficient to prevent the build-up of significant depots in the pipes and mains (id. at 69-70). The Company argues that the WTP and an intensive flushing program will address the problem of discoloration raised by Hull (id. at 70). Additionally, the Company states that it is committed to undertaking an intensive flushing program to work through the entire distribution system in Service Area A once the WTP is in service providing clean, treated water to the distribution system (Company Brief at 69-70, citing Tr. 1, at 215-216, 219-220; Tr. 6, at 156-157; Tr. 10 at 72-74). The Company states that a complete flushing of the distribution system will be completed by November 1997 (Tr. 6, at 179-180).

D.P.U. 95-118

Page 183

Regarding the adequacy of water pressure, Mass-Am acknowledges that higher elevations at the outer reaches of the distribution system in Hull continue to experience occasional low levels of water pressure, particularly during the peak demand periods (Company Brief at 70). Mass-Am indicates that it has invested in a booster pump station on Strawberry Hill to relieve some of the pressure problems (id.). Further, the Company maintains that it has made a commitment to investigate the need for additional system improvements in Hull, including a possible second booster station, and has committed to invest in such improvements as are reasonably required (id. citing Tr. 10, at 85-86, 91).

B. Analysis and Findings

The Department recognizes that the WTP should significantly reduce the levels of iron and manganese present in the Company's water supplies. There is concern, however, that the treated and purified water will be discolored by rust and sediment in the Company's distribution mains. Therefore, the Department directs that Company to flush the entire distribution system in Service Area A by November 1997.

Accordingly, the Department hereby directs the Company to provide progress reports to the Department and the affected towns, on January 31, 1998 and August 1, 1998, explaining the status of the flushing program.

The Department is also concerned about the water pressure in Hull, therefore, the Company is directed to investigate ways to improve the water pressure in Hull, including the addition of another booster station.

In light of the foregoing, in instances where at least twenty or more customers collectively in Hingham and Hull are affected by the lack of pressure or potability of water, the Company must so advise the Department within 24 hours of such an incident. The

D.P.U. 95-118

Page 184

Department will continue to monitor the Company's quality of service performance.

In this Order, the Department determined an appropriate return on equity of 13 percent. However, this rate is appropriate only on the condition that the water quality improves. Therefore, the Department finds it appropriate to link this return on equity to specific performance by Mass-Am with respect to its quality of service. Accordingly, the Department places the Company on notice that its quality of service will be monitored. D.P.U. 95-92, at 39-40 (1996). The Department will evaluate the Company's quality of service based on our review of the required report, any municipal reports provided, and customer comments. If the Department finds that the Company has failed to address these concerns in a satisfactory and timely manner, and has failed to provide sufficient reason for such failure, the Department shall reopen this proceeding for the purpose of re-evaluating Mass-Am's allowed return on equity. The Department places the Company on notice that deficient service will be cause for reconsideration of the reasonableness of the 13 percent return on equity set forth by the Department pursuant to 220 C.M.R. s. 31.02.

See text for Schedules 1 - 11, Page 185-196.

D.P.U. 95-118

Page 197

XI. ORDER

Accordingly, after due notice, hearing and consideration, it is

ORDERED: That the rates and charges set forth in M.D.P.U. No. 1, Revision Sheet Nos. 1A, 1B, 2, 3, 4, and newly created Sheet Nos. 6 and 7, filed with the Department on November 16, 1995 to become effective on December 1, 1995 by Massachusetts-American Water Company be and hereby are disallowed; and it is

FURTHER ORDERED: That Massachusetts-American Water Company may

file new schedules of rates and charges designed to produce total additional revenues of \$1,364,574 over rates currently in effect; and it is

FURTHER ORDERED: That Massachusetts-American Water Company may file new schedules of rates and charges designed to recover the lease and operating costs associated with its water treatment plant in Hingham, Massachusetts, consistent with this Order; and it is

FURTHER ORDERED: That Massachusetts-American Water Company shall comply with all other Orders and directives contained herein; and it is

D.P.U. 95-118

Page 198

FURTHER ORDERED: That the new rates shall apply to water consumed on or after the date of this Order, but unless otherwise ordered by the Department, shall not become effective earlier than seven (7) days after they are filed with supporting data demonstrating that such rates comply with this Order.

By Order of the Department,

/s/ John B. Howe, Chairman

/s/ Mary Clark Webster, Commissioner

/s/ Janet Gail Besser, Commissioner

A true copy

Attest;

MARY L. COTTRELL

Secretary

D.P.U. 95-118

Page 199

Appeal as to matters of law from any final decision, order or ruling of the Commission may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the Order of the Commission be modified or set aside in whole or in part.

Such petition for appeal shall be filed with the Secretary of the Commission within twenty days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. (Sec. 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971).

End Of Decision

© 2011 Social Law Library. All Rights Reserved.