TOWN OF MILTON, MA
TABLE OF CONTENTS

	Page
EXECUTIVE SUMMARY	ES-1
1. **EXISTING WATER SYSTEM GIS MAPPING AND MODELING**	
1.1. General Background	1-1
1.2. Collection, Review and Modification of Available Information	1-1
1.3. Regulatory Requirements	1-3
1.4. Hydrant Flow and C-Value Testing	1-4
1.4.1. Hydrant Flow Testing	1-4
1.4.2. C-Value Testing	1-5
1.5. Hydraulic Model Creation and Calibration	1-6
1.6. Mapping Fire Flow Deficiencies, Unlined Cast Iron Pipe and Break History	1-7
1.7. Recommended Improvements to Flushing and Leak Detection Programs	1-8
1.7.1. Flushing Program	1-8
1.7.2. Hydrant Inspection/Replacement Program	1-9
1.7.3. Leak Detection Program	1-10
1.8. Valve Exercising Program	1-11
1.9. Recommended Improvements for Service Customers Near Town Boundaries	1-12
2. WATER SYSTEM ELVALUATION	
2.1. Water System Overview	2-1
2.2. Water System Hydraulic Modeling	2-2
2.3. Seasonal Aged Water Issues in Tanks	2-9
2.4. Recent Changes in MWRA Storage Facilities and Impacts on Milton's Storage Needs	2-10
2.5. Existing Water Storage Tank Elevation	2-12
2.6. Recommended Improvements to Telemetry for Tank Monitoring	2-15
2.7. Water Storage Tank Alternative Analysis and Recommended Improvements	2-16
3. DELIVERY AND ACCOUNTING	
3.1. Proposed Water Meter System	3-1
3.1.1. Meter Reading	3-1
3.1.2. Billing System	3-1
3.1.3. Issues with Current Metering System	3-1
3.2. Proposed Water Metering System	3-2
3.2.1. Data Transmission	3-2
3.3. Recommendation	3-3
4. RECOMMENDED DISTRIBUTION SYSTEM IMPROVEMENTS	
4.1. General	4-1
4.2. General Distribution Improvements	4-1
4.3. Prioritized Water Main Improvements	4-2
4.4. Ten-Year Water Main Capital Improvement Program	4-2
4.5. Recommendations	4-6

TOWN OF MILTON, MA
TABLE OF CONTENTS

Page

LIST OF TABLES

Table 1.1 – Summary of Existing Water System 1-2
Table 1.2 – Appurtenances 1-2
Table 1.3 – Water Main Installed by Decade 1-3
Table 1.4 – Recommended Fire Flow For One and Two Family Dwellings 1-3
Table 1.5 – ISO Fire Flow Recommendations 1-4
Table 1.6 – Hydrant Flow Tests 1-4
Table 1.7 – "C-Value" Flow Tests 1-5
Table 1.8 – Average Day Demand 1-6
Table 2.1 – Water Storage Tanks 2-2
Table 2.2a – Simulation Hydraulic Model Run #1 2-3
Table 2.2b – Simulation Hydraulic Model Run #2 2-5
Table 2.2c – Simulation Hydraulic Model Run #3 2-6
Table 2.2d – Simulation Hydraulic Model Run #4 2-8
Table 2.3 – Blue Hills Water Storage Tank Alternatives – Opinion of Probable Cost 2-19
Table 2.4 – Chickatawbut Water Storage Tank Alternatives – Opinion of Probable Cost 2-20
Table 2.5 – Water Storage Tank Future Replacement – Opinion of Probable Cost 2-21
Table 4.1 – 10-Year Water Main Capital Improvement Plan 4-4

LIST OF FIGURES

Figure 1.1 – Existing Water Distribution System 1-1a
Figure 1.2 – Fire Flow Test Locations 1-4a
Figure 1.3 – C-Value Test Locations 1-5a
Figure 1.4 – Fire Flow Deficient Locations & Unlined Cast Iron Water Mains 1-7a
Figure 1.5 – Water Main Install Decade & Water Main Breaks and Leak Location 1-7b

LIST OF APPENDICES (CONTAINED ON ENCLOSED CD)

APPENDIX A – Hydrant Flow Tests
APPENDIX B – C-Value Tests
APPENDIX C – List of Deficient Fire Flow Water Mains
APPENDIX D – Hydraulic Model Simulation Run Figures