



# TABLE OF CONTENTS

## Executive Summary

ES.1	Background	ES-1
ES.2	Needs Assessment Report (April 2007) Summary	ES-1
ES.3	Technology Screening Report (November 2007) Summary	ES-1
ES.4	Draft Alternatives Scenarios Analysis and Site Evaluations	ES-4
ES.5	2012 Development of Options 1A, 1B, and 1C	ES-7
ES.6	Cost Evaluation, and Operations and Maintenance Considerations	ES-10
ES.7	Framework	ES-12
ES.8	Draft Recommended Plan and Draft Environmental Impact Report Outline	ES-14
ES.9	Summary	ES-15

## Glossary of Common Acronyms

### 1 Introduction

1.1	Project Identification and Purpose	1-1
1.2	Massachusetts Estuaries Project (MEP) Findings	1-2
1.3	Needs Assessment Report Findings	1-4
1.4	Technology Screening Report Summary	1-6

### 2 Preliminary Site Evaluation and Design

2.1	Introduction	2-1
2.2	Treated Water Recharge Technologies	2-1
2.3	Preliminary Site Evaluations	2-1
2.4	USGS Modeling Efforts	2-2
2.5	2007 Site Evaluations	2-4
2.6	2010 Site Evaluations	2-6
2.7	Treated Water Recharge Considerations	2-7
2.8	Wetland Restoration at the Santuit Bogs	2-9
2.9	Treated Water Recharge Sites for MEP Model Runs	2-10
2.10	Findings	2-11

### 3 2008 Initial Alternative Scenarios and Model Results

3.1	Introduction	3-1
3.2	Scenario 1—No Expansion of Existing Treatment Plants	3-5



3.3	Scenario 2—Expansion of Existing Treatment Facilities	3-8
3.4	Scenario 3/3R—Cluster	3-9
3.5	Scenario 4—Fair Share Reduction	3-11
3.6	Scenario 5—Centralized Wastewater Treatment	3-13
3.7	MEP Model Runs and Results	3-14
3.8	Summary	3-15
<b>4</b>	<b>2012 Development of Options 1A, 1B, and 1C</b>	
4.1	Introduction	4-1
4.2	Background	4-1
4.3	Option Description	4-5
4.4	MEP Data	4-7
4.5	MEP Model Results	4-9
<b>5</b>	<b>Cost Evaluation and Operations and Maintenance Considerations</b>	
5.1	Introduction	5-1
5.2	2008 Cost Analysis	5-2
5.3	Updated Cost Evaluation	5-4
5.4	Operation, Maintenance, and Monitoring of Plan Components	5-7
5.5	Options for Ownership and Management of Facilities	5-8
<b>6</b>	<b>Framework</b>	
6.1	Introduction	6-1
6.2	Source Removal	6-2
6.3	Direct Environmental Mitigation	6-2
6.4	Land Management Strategies	6-3
6.5	Recommended Plan Components	6-3
<b>7</b>	<b>Draft Recommended Plan and Draft Environmental Impact Report Outline</b>	

## List of Tables

Table ES-1	Sites Under Consideration
Table ES-2	Summary of Threshold Comparison Results by Scenario
Table ES-3	Option 1A—Summary of Recharges
Table ES-4	Option 1B—Summary of Recharges
Table ES-5	Option 1C—Summary of Recharges
Table ES-6	Summary of Threshold Comparison Results by Option



Table 1-1	Percent Nitrogen Removals From Septic Systems
Table 1-2	Priority Area Criteria Summary
Table 3-1	Summary of Project Planning Area Estimated Flows
Table 3-2	Estimated Number of Properties Served Under Each Scenario (1, 2, 4, and 5)
Table 3-3	Existing WWTF Design Life and Permit Expiration Years
Table 3-4	Summary of Threshold Comparison Results
Table 4-1	Option 1A—Summary of Recharges (from Table 1)
Table 4-2	Option 1B—Summary of Recharges (from Table 2)
Table 4-3	Option 1C—Summary of Recharges (from Table 3)
Table 4-4	Summary of Threshold Comparison Results
Table 5-1	Comparison of Estimated Scenarios/Options Collection System Costs
Table 5-2	Comparison of Estimated Scenarios/Options WWTF Costs
Table 5-3	Comparison of Estimated Scenarios/Options I/A Component Costs
Table 5-4	Comparison of Estimated Scenarios/Options Total Capital Costs
Table 6-1	Cluster System Site Review

## List of Figures

Figure ES-1	Project Planning Area
Figure ES-2	Potential Effluent Recharge Sites
Figure 1-1	Project Planning Area
Figure 1-2	MEP Percent Septic (only) Removals
Figure 1-3	Priority Areas
Figure 2-1	Potential Effluent Recharge Sites
Figure 2-2	Wastewater Removal Areas
Figure 6-1	Cluster System Locations
Figure 6-2	Briarwood
Figure 6-3	Holland Mills
Figure 6-4	Pickerel Cove
Figure 6-5	Pirates Cove
Figure 6-6	Popponessett Island
Figure 6-7	Santuit Pond
Figure 6-8	Monomoscoy Island
Figure 6-9	The Seabrooks



Figure 6-10 Tri-Town Circle Area

## List of Appendices

- Appendix ES-1 MEPA Certificates and Comment Response Memorandum
- Appendix A Needs Assessment Report Addendum
- Appendix B 2007 Technical Screening Report—Various Chapter 4 Tables
- Appendix C Draft 2008 Alternative Scenarios and Site Evaluation Report—USGS Figures
- Appendix D Draft 2008 Alternative Scenarios and Site Evaluation Report—Site Evaluation Tables and Figures
- Appendix E Draft 2008 Alternative Scenarios and Site Evaluation Report—Scenarios 1, 2, 3, and 4 Related Tables and Figures
- Appendix F Nitrex™ Technology Scenario Plan Dated April 2012—Lombardo Associates, Inc.
- Appendix G Figures and Tables from Memorandum on Options 1A, 1B, and 1C Dated February 15, 2012
- Appendix H Draft 2008 Alternative Scenarios and Site Evaluation Report—Chapter 4 Tables and EPA Management Model
- Appendix I Town of Mashpee Selectmen Letter to MMR Dated March 27, 2013
- Appendix J Complete 2007 Technical Screening Report
- Appendix K Complete Draft 2008 Alternative Scenarios and Site Evaluation Report