

CHAPTER 9

NEEDS ASSESSMENT SUMMARY

9.1 INTRODUCTION

The purpose of this Needs Assessment Study is to address nitrogen issues for the project planning area (PPA) and begin the Watershed Nitrogen Management Plan (WNMP) process. Information on existing wastewater facilities (septic systems and small treatment plants), physical features, land use, and regulatory issues affecting wastewater facilities has been discussed in previous chapters. Existing conditions and problems related to environmental resources, nitrogen loadings, and on-site septic systems have been evaluated and summarized. In addition, future conditions of the PPA relating to population, growth, and the potential effects of that growth on any proposed wastewater collection, treatment, and disposal facilities have been evaluated.

The purpose of this chapter is to summarize and integrate the PPA's existing and future conditions, which will in turn establish the nitrogen management needs for the PPA. The needs assessment summary is divided into the following major areas: Priority Area Groupings, Priority Areas in Relation to MEP Findings, Pilot Project, and the Next Steps to Identify Solutions for Nitrogen Management Needs.

9.2 PRIORITY AREA GROUPINGS

Based on the criteria listed discussed in Chapter 8, the Priority Areas were grouped into Primary, Secondary, and Tertiary Areas.

Primary Areas are those areas that are located within MEP watersheds requiring high nitrogen removal, areas with high nitrogen loading rates, areas with predominantly year round residents,

and planning zone specific criteria identified by the Town of Mashpee Planning Department (such as phosphorus issues in Santuit Pond and the quality and condition of the Mashpee River).

Secondary Areas include those Priority Areas with some of the same concerns as the Primary Areas. However, the secondary areas typically have lower nitrogen loading rates and more seasonal homes. For these reasons, it is recommended these areas be addressed in a later implementation stage of the ultimate recommended plan to address existing nitrogen loading needs.

Tertiary Areas will need to address nitrogen loading issues in the future, but due to the predominantly seasonal residences and the location within the MEP watersheds (typically far upstream in the watershed or completely outside of watershed lines), it is not anticipated that immediate attention is warranted.

The following list summarizes the Priority Area groups:

Primary Areas

- M-1 “Johns Pond”
- M-2 “Mashpee Central”
- M-3 “Shoestring Bay”

Secondary Areas

- M-4 “Santuit Pond”
- M-5 “Mashpee River”
 - M-6 “Jehu Pond”
- M-7 “Popponesset Creek”
- S-4 “Sandwich Quashnet”
 - F-1 “Red Brook”

Tertiary Areas

- M-8 “Mashpee-Wakeby Pond”
 - M-9 “MMR”
 - M-10 “Mashpee East”
 - M-11 “Quashnet River”
 - M-12 “Mashpee South”
 - M-13 “New Seabury”
 - S-1 “Sandwich West”
 - S-2 “J Well”
- S-3 “Snake Pond”
- S-5 “Sandwich Popponesset”
- B-1 “Barnstable Fresh Water”
 - B-2 “Shoestring Bay”
 - B-3 “Pinquickset Cove”
 - B-4 “Popponesset Bay”
- F-2 “Falmouth Quashnet”
- F-3 “Falmouth North”

Table 9-1 summarizes the main criteria considered when determining priority areas.

TABLE 9-1

PRIORITY AREA CRITERIA SUMMARY

Priority Area Name	MEP Removal Rate	Nitrogen Loading Rates	Year Round	Other Town Considerations	Zone II
Primary Priority Areas					
M-1 – Johns Pond	√	√	√		
M-2 – Mashpee Central	√	√	√		
M-3 – Shoestring Bay	√	√	√		√
Secondary Priority Areas					
M-4 – Santuit Pond		√	√	√	√
M-5 – Mashpee River			√	√	√
M-6 – Jehu Pond	√	√			
M-7 – Popponeset Creek	√	√			
S-4 – Sandwich Quashnet		√	√		√
F-1 – Red Brook	√	√			
Tertiary Priority Areas					
M-8 – Mashpee-Wakeby Pond			√		
M-9 – MMR			√		
M-10 – Mashpee East			√		√
M-11 – Quashnet River			√		√
M-12 – Mashpee South			√		√
M-13 – New Seabury		√			√
B-1 – Barnstable Fresh Water			√		√
B-2 – Shoestring Bay (Barnstable)	√		√		√
B-3 – Pinquisset Cove					
B-4 – Popponeset Bay	√				
S-1 – Sandwich West			√		√
S-2 – J Well			√		√
S-3 – Snake Pond			√		√
S-5 – Sandwich Popponeset			√		√
F-2 – Falmouth Quashnet	√				
F-3 – Falmouth North			√		√
Note: Prioritization is based on build-out conditions.					

9.3 PILOT PROJECT

Mashpee is working with MADEP on the development of case studies in three estuaries. The goal of this “Pilot Project” is to investigate the use of inter-municipal agreements with respect to watershed based permitting and establishing fair share nitrogen management. This project has brought together the Towns of Mashpee, Sandwich, and Barnstable to examine the best methods to achieve TMDL targets for the Popponesset Bay watershed.

This is an important piece of the nitrogen management planning process for the full development of the WNMP and its implementation in the future.

9.4 NEXT STEPS TO IDENTIFY SOLUTIONS FOR NITROGEN MANAGEMENT NEEDS

The next phases of the WNMP process are the screening of technologies and screening of alternatives. As the technologies and alternatives are evaluated and accepted or eliminated, a detailed evaluation can be made and the WNMP can be fully developed. Any remaining issues are then resolved before the final step of environmental and public review.

The Town of Falmouth is currently moving forward with wastewater planning in the Eastern portion of the town, which includes areas that are within the PPA. These efforts can be coordinated with the WNMP, but the Town of Falmouth may wish to use different prioritization criteria for their planning purposes. Additionally, MEP work for the western portion of the Waquoit Bay watershed is still incomplete. The results of this work may have an impact on the findings and recommendations that were outlined in the reports for the Waquoit Bay East watershed. This future work by both the Town and MEP should be taken into consideration as the WNMP process moves forward.