

WATERSHEDS: UPPER CAPE Great and Little Sippewisset Marshes



The Problem

For the purposes of the §208 Plan Update, areas of wastewater need are primarily defined by the amount of nitrogen reduction required as defined by the Total Maximum Daily Load (TMDL) or Massachusetts Estuaries Project (MEP) technical report. An MEP report will not be developed for Great and Little Sippewisset Marsh watersheds and other Cape watersheds where nitrogen is not believed to be a critical issue due to tidal flushing, low intensity development, or geomorphology.

Great Sippewisset Marsh

- **MEP TECHNICAL REPORT STATUS:** Not Being Studied
- **TMDL STATUS:** Not Being Studied
- **TOTAL WASTEWATER FLOW:** 22 MGY (million gal year)
- **UNATTENUATED SEPTIC NITROGEN LOAD:** 2,187 kg/Y (kilograms per year)
- **ATTENUATED NITROGEN LOAD:** Not assessed; There are significant opportunities in the Great Sippewisset Marsh watershed for natural attenuation considering the extensive marsh fringing the system.

CONTRIBUTING TOWN

- **FALMOUTH**

GREAT SIPPEWISSET MARSH ESTUARY

- **EMBAYMENT AREA:** 28 acres
- **EMBAYMENT VOLUME:** Unknown
- **2012 INTEGRATED LIST STATUS:** Category 4a for fecal coliform
 - Category 4a, TMDL is complete
 - www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf

GREAT SIPPEWISSET MARSH WATERSHED

- **ACRES:** 1,010
- **PARCELS:** 499
- **% DEVELOPED RESIDENTIAL PARCELS:** 71%
- **PARCEL DENSITY:** 2 acres per parcel (approx.)
- **WASTEWATER TREATMENT FACILITIES:** 0

Little Sippewisset Marsh

- **MEP TECHNICAL REPORT STATUS:** Not Being Studied
- **TMDL STATUS:** Not Being Studied
- **WASTEWATER FLOW:** 12 MGY (million gal year)

Great and Little Sippewisset Marshes have shoreline located entirely in the Town of Falmouth. They receive tidal flow from Buzzards Bay and extend approximately a mile and a half mile, respectively, to ground water fed drainage within the salt marsh at the base of the Falmouth Moraine. The marshes support a variety of recreational uses including boating, swimming, shell fishing and fin fishing.

WATERSHEDS: UPPER CAPE

- **UNATTENUATED SEPTIC NITROGEN LOAD:** 1,196 kg/Y (kilograms per year)
- **ATTENUATED NITROGEN LOAD:** Not assessed; There are significant opportunities in the Little Sippewisset Marsh watershed for natural attenuation considering the extensive marsh fringing these systems.
- **SOURCES OF TOTAL NITROGEN:** Not assessed

CONTRIBUTING TOWNS

- **FALMOUTH:** 100%

LITTLE SIPPEWISSET MARSH ESTUARY

- **EMBAYMENT AREA:** 14 acres
- **EMBAYMENT VOLUME:** Unknown
- **2012 INTEGRATED LIST STATUS:** Category 4a for fecal coliform
 - Category 4a, TMDL is complete
 - www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf

LITTLE SIPPEWISSET MARSH WATERSHED

- **ACRES:** 483
- **PARCELS:** 274
- **% DEVELOPED RESIDENTIAL PARCELS:** 81%
- **PARCEL DENSITY:** 1.8 acres per parcel (approx.)
- **WASTEWATER TREATMENT FACILITIES:** 0

Freshwater Sources

PONDS

- **IDENTIFIED SURFACE WATERS:** 8
- **NUMBER OF NAMED FRESHWATER PONDS:** 4

GREAT AND LITTLE SIPPEWISSET MARSHES

- **PONDS WITH PRELIMINARY TROPHIC CHARACTERIZATION:** 0 (Listed In Appendix 4C, Ponds With Water Quality Data)
- **2012 INTEGRATED LIST STATUS:** None listed
- **DISCUSSION:** There are no ponds in the Little Sippewisset Marsh watershed. The Town of Falmouth has not fully engaged in the Pond and Lake Stewardship (PALS) program that has helped establish baseline pond water quality Cape wide. Although none of the four named ponds in the Great Sippewisset Marsh watershed have water quality data that allows for development of a preliminary trophic characterization, Long Pond, Falmouth's primary drinking water supply, contributes to both Great and Little Sippewisset Marshes and is monitored regularly for drinking water quality.

STREAMS

- **SIGNIFICANT FRESHWATER STREAM OUTLETS:** A stream in the Great Sippewisset Marsh watershed, with outflows from Fresh Pond, potentially provides opportunities for stream-flow and nitrogen concentration measurements.

DRINKING WATER SOURCES

- **WATER DISTRICTS:** 1
 - Falmouth Water Department provides drinking water to residents in both watersheds
- **GRAVEL PACKED WELLS:** 0
- **SMALL VOLUME WELLS:** 0
- **DISCUSSION:** Long Pond, the major surface water supply for Falmouth, discharges into Little and Great Sippewisset watersheds. The Town of Falmouth recently voted to construct a water treatment filtration plant for this supply.

Degree of Impairment and Areas of Need

Since there is no evidence of water quality impairment at this time, wastewater needs are determined based upon other factors, such as Title5 compliance.

Great and Little Sippewisset Marshes are however listed on the 2012 Integrated List in Category 4a as having a completed TMDL for fecal coliform.

LOCAL PROGRESS

The Town of Falmouth contributes 100% of the watershed nitrogen load to Great and Little Sippewisset Marshes. The Town of Falmouth has an approved Comprehensive Wastewater Management Plan (CWMP) (2014) that proposes Targeted Watershed Management, including a combination of traditional and non-traditional approaches to reduce nitrogen loading to coastal waters on Falmouth's south side. The MEP is not scheduled to evaluate Great and Little Sippewisset Marshes for nutrient-related impairment. Local efforts in this town are described in more detail in Chapter 6.