

WATER THREAT LEVEL  
**LOW**

WATERSHEDS: LOWER CAPE  
**Red River**



## 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) and/or Massachusetts Estuaries Project (MEP) technical report. An MEP report will not be developed for the Red River watershed and other Cape watersheds where nitrogen is not believed to be a critical issue due to tidal flushing, low intensity development, or geomorphology.

- **MEP TECHNICAL REPORT STATUS:** Not Being Studied
- **TMDL STATUS:** Not Being Studied
- **TOTAL WASTEWATER FLOW:** 64 MGY (million gal per year)
- **UNATTENUATED SEPTIC NITROGEN LOAD:** 6,043 Kg/Y (kilograms per year)
- **ATTENUATED NITROGEN LOAD:** Not assessed

## CONTRIBUTING TOWNS

- **HARWICH**
- **CHATHAM**

## RED RIVER ESTUARY

- **EMBAYMENT AREA:** .61 acres
- **EMBAYMENT VOLUME:** Unknown
- **2012 INTEGRATED LIST STATUS FOR NUTRIENTS:**  
Not Listed
  - [www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf](http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf)

## RED RIVER WATERSHED

- **ACRES:** 1,761
- **PARCELS:** 1,533
- **% DEVELOPED RESIDENTIAL PARCELS:** 81%
- **PARCEL DENSITY:** 1.1 acres per parcel (approx.)
- **WASTEWATER TREATMENT FACILITIES:** 0

## Freshwater Sources

### PONDS

- **IDENTIFIED SURFACE WATERS:** 18
- **NUMBER OF NAMED FRESHWATER PONDS:** 11
- **PONDS WITH PRELIMINARY TROPHIC CHARACTERIZATION:** 5  
(Listed In Appendix 4C, Ponds With Water Quality Data)
- **2012 INTEGRATED LIST STATUS:** None listed

Red River system is an estuary located in the Towns of Harwich and Chatham. The lower portion of the Red River system is dominated by salt marsh. The estuary supports shell fishing.

## STREAMS

- **SIGNIFICANT FRESHWATER STREAM OUTLETS: 1**  
Red River:
  - Average Flow: Not assessed
  - Average Nitrate Concentrations: Not assessed

## DRINKING WATER SOURCES

- **WATER DISTRICTS: 2**
  - Chatham Water Department
  - Harwich Water Department
- **GRAVEL PACKED WELLS: 9**
  - 8 have nitrate concentrations between 0 and 0.5 mg/L
  - 1 has nitrate concentrations between 1 and 2.5 mg/L
- **SMALL VOLUME WELLS: 0**

## 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.

### LOCAL PROGRESS

#### HARWICH

The Town of Harwich contributes approximately 95% of the unattenuated wastewater nitrogen load to the Red River watershed. The town submitted its draft Comprehensive Wastewater Management Plan (CWMP) for review in 2012. While not specific to the Red River watershed, for other

areas the Harwich CWMP includes both structural and non-structural interventions, such as use of stormwater best management practices (BMPs), enhanced natural attenuation, and permeable reactive barriers (PRBs) to reduce wastewater collection.

#### CHATHAM

The Town of Chatham contributes approximately 5% of

the unattenuated wastewater nitrogen load to the Red River watershed. The town began implementing its CWMP in 2010. The CWMP proposes plans to sewer the entire town, with the implementation of later sewerage phases being contingent upon results of on-going monitoring under the adaptive management plan.

Local efforts in these towns are described in Chapter 6.