

## Information on Taunton River Watershed Major Municipal Wastewater Treatment Plants

The Taunton River Watershed has seven (7) major municipal wastewater Treatment plants shown by blue teardrops on [TRWA's sampling location map](#).

WWTF Municipality	Permit Number (Link to Permit)	Design Flow MGD	TN Limit lbs/d (mg/l)	TP Limit mg/l	Receiving Water	Comments
Fall River	<a href="#">MA0100382</a>	30.9	None	None	Mount Hope Bay	Permit expired 12/07/2005
Somerset	<a href="#">MA0100676</a>	4.2	None	None	Taunton River	Permit expired 09/30/2008
Taunton	<a href="#">MA0100897</a>	8.4	210 (3)	None	Taunton River	Permit reissued 04/10/2015
Mansfield/Norton/Foxboro	<a href="#">MA0101702</a>	3.14	131 (5)	0.17	Three Mile River	Permit reissued 09/11/2014
Middleborough	<a href="#">MA0101591</a>	2.16	90 (5)	0.15	Nemasket River	Permit reissued 05/05/2014
Bridgewater	<a href="#">MA0100641</a>	1.44	60 (5)	0.20	Town River	Permit reissued 09/30/2016
Brockton	<a href="#">MA0101010</a>	18.0	450 (3)	0.101	Salisbury Plain River	Permit reissued 01/11/2017

Final permits, draft permit fact sheets and the final permit response to comments may be found on the EPA Region 1 website at:

<https://www.epa.gov/npdes-permits/massachusetts-final-individual-npdes-permits> or by Ctrl +Click on the permit numbers in the table above.

As outlined in the permit fact sheets for the five (5) reissued permits in the Taunton River watershed, EPA Region 1 (R1) did a wasteload allocation (WLA) for total nitrogen (TN) for six (6) municipal wastewater treatment plants (WWTPs) in the watershed (all except Fall River) in 2012. The five reissued permits were drafted from 2013 to 2015 after which R1 stopped drafting new watershed permits. The TN allocation for Somerset is 130 lbs/day based on 3.7 mg/l at plant design flow ( $130 \text{ lbs/day} = 4.2 \text{ MGD} \times 3.7 \text{ mg/l} \times 8.34 \text{ conversion factor}$ ). The mass (lbs/day) effluent limitations for TN used in the permits and listed above are based on the concentration in parenthesis in the table multiplied by plant design flow and the conversion factor as illustrated for Somerset above. In order to meet a mass (lbs/day) effluent limit based on TN 3 mg/l Brockton and Taunton are constructing WWTP upgrades using the 4 stage Bardenpho treatment process which is an often-used technology employed to achieve low TN effluent levels. Fall River lower down stream in the estuary has more tidal dilution but also has the largest wastewater flow (3.7 times Taunton's effluent discharge). Consequently, it should construct a WWTP upgrade employing treatment similar to Taunton and Brockton and meet comparable effluent limitations.

The total phosphorus (TP) effluent limits are based on meeting an instream concentration of 0.1 mg/l (suggested in EPA "[Quality Criteria for Water 1986](#)" a.k.a. the Gold Book) at the 7-day 10-year low flow of the receiving stream assuming the WWTP is discharging at design flow and complete mixing. In other words, this limit is based on a dilution calculation at low flow as described in the permit fact sheets to meet a water quality criterion of 0.1 mg/l TP in the stream. Because Fall River, Somerset and Taunton discharge to waters which are tidal saltwater (Class SB) (brackish water) they have not been given TP effluent limitations like the WWTPs discharging to freshwater (Class B) in the upper watershed.

Limitation of algae stimulating nutrients TN and TP is necessary to control algae blooms which destroy aquatic life and threaten human health.