

**FINAL REPORT**  
**for**  
**Peconic Bay Pathogens TMDL**

**Prepared for:**  
**U.S. Environmental Protection Agency**  
**Oceans and Coastal Protection Division**

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## **Executive Summary**

This document was provided to support the development of total maximum daily loads (TMDLs) associated with fecal and total coliforms to a series of estuarine receiving waters within the greater Peconic estuary area in New York. The basis for the TMDL analysis lies within New York's 303(d) list of water segments that exhibit impaired conditions. The impairments are associated with numerical water quality standards for pathogens in New York's class SA water bodies.

This analysis is focused on 25 individual water bodies listed on New York's Priority Water Bodies List (PWL) (although 5 of these water bodies share the same PWL number). This assessment is broken into 3 primary steps: (1) collect and analyze pathogen monitoring data from state and county sources and determine the degree and extent of impairment within the study area; (2) provide an assessment of contributing sources of bacteria to each of the 25 water bodies; and (3) determine the degree of bacterial load reductions that would be necessary to achieve positive water quality conditions (i.e., non-impairment) in each water body.

Water quality data were collected from NY State and Suffolk County and analyzed based on National Shellfish Sanitary Program (NSSP) guidance where possible. In some cases where data were limited additional criteria were developed for the purpose of completing a TMDL analysis.

An EPA-approved model, the Watershed Treatment Model (WTM), was applied to estimate relative sources of fecal coliform for each water body. Pathogen loading was based primarily on general land use literature values (anthropogenic and non-anthropogenic sources are not separated out). Separate waterfowl and domestic pet loading estimates were also used. Stormwater drainage maps were provided by the Peconic Estuary Program and modified as necessary to appropriate drainage scales associated with each of the 25 PWL water bodies. Some drainage areas were subdivided further based on site-specific conditions such as geomorphology and spatial distribution of sampling points. The WTM was used in combination with regional and local information on contributing sources of coliforms, but many of the model coefficients were based on default, national values where site-specific data were limited. Additional contributing sources such as sediment resuspension, wrack mats, waterfowl and other wildlife were evaluated and applied in a limited fashion. Suffolk County high resolution land parcel/land use data were used to drive the WTM. The resulting bacterial loads were then estimated as mass loads on an annual basis.

Based on a review of all available water quality data TMDL analyses were not conducted on all 25 water bodies. In some cases sufficient data was not available and in one case no exceedances were found based on all available data. These cases are illustrated in the table below.

TMDLs and associated load reductions were determined using the statistical rollback method, which is a linear reduction relationship between monitoring stations exhibiting impairment and the contributing drainage areas (i.e., watersheds). A margin of safety (MOS) was implicitly applied through a number of conservative assumptions and explicitly applied as 10% of the ultimate loading capacity.

This analysis has determined that the most significant contributors of pathogens to the water bodies within this study are nonpoint sources, particularly stormwater runoff containing waterfowl, wildlife, domestic pet, and livestock waste, as well as direct deposition of waterfowl waste. Stormwater runoff through municipal stormwater conveyance systems (MS4s) has been estimated and is relatively significant in most communities that are within MS4 regulations. Others sources such as septic systems, illicit marine vessel discharges, and other illicit activities may contribute pathogen loads at local and infrequent scales; however, these are not believed to be considerable sources at this time.

<b>Priority Water Bodies List No.</b>	<b>Water Body</b>	<b>TMDL Development Status</b> X = Completed N <sub>d</sub> = Not completed due to incomplete data N <sub>x</sub> = Not completed due to non-exceedance
1701-0050	Dering Harbor	X
1701-0234	Budds Pond	X
1701-0049	Stirling Creek and Basin	X
1701-0235	Town/Jockey Creeks and tidal tributaries	X
1701-0236	Goose Creek	X
1701-0162	Hashamomuck Pond	X
1701-0245	Richmond Creek and tidal tributaries	X
1701-0247	Tidal tributaries, Great Peconic Bay, Northshore, GPB-97 (Downs Creek)	N <sub>d</sub>
1701-0247	Tidal tributaries, Great Peconic Bay, Northshore, GPB-99 (Deep Hole Creek)	X
1701-0247	Tidal tributaries, Great Peconic Bay, Northshore, GPB-98 (Halls Creek)	N <sub>d</sub>
1701-0247	Tidal tributaries, Great Peconic Bay, Northshore, GPB-99-P492 (Unnamed Pond)	N <sub>d</sub>
1701-0247	Tidal tributaries, Great Peconic Bay, Northshore, GPB-100 (James Creek)	X
1701-0030	Flanders Bay, east/center and tributaries	X
1701-0272	Reeves Bay and tidal tributaries	X
1701-0051	Sebonac Creek/Bullhead Bay and tidal tributaries	X
1701-0354	Scallop Pond	N <sub>x</sub>
1701-0037	North Sea Harbor and tributaries	X
1701-0048	Wooley Pond	X
1701-0237	Noyac Creek and tidal tributaries	X
1701-0035	Sag Harbor and Sag Harbor Cove	X
1701-0046	Northwest Creek and tidal tributaries	X
1701-0047	Acabonac Harbor	X
1701-0031	Montauk Lake	X
1701-0169	Oyster Pond/Lake Munchogue	N <sub>d</sub>
1701-0253	Little Sebonac Creek	X

Using these TMDLs, New York State, with support from the Peconic Estuary Program Management Conference and Comprehensive Conservation and Management Plan process (i.e., triennial updates), should prioritize subwatersheds and develop and implement detailed pathogen reduction plans. Also, TMDLs should be revisited and updated if new information (e.g., Peconic Estuary Program Waterfowl Study) warrants.

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