



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region 1  
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BOSTON, MA 02114-2023

October 26, 2007

Betsey Wingfield, Chief  
Bureau of Water Protection and Land Reuse  
Connecticut Department of Environmental Protection  
79 Elm Street  
Hartford, CT 06106-5127

Dear Ms. Wingfield:

Thank you for the final submission of **A Total Maximum Daily Load Analysis for Southport Harbor Shellfishing Areas – Fairfield, Connecticut** for indicator bacteria (Fecal coliform). Southport Harbor (CT7108-E\_04) was included on Connecticut's 2004 and 2006 303(d) Lists as a priority water for TMDL development. TMDLs were calculated for two sampling locations within segment 04 of Southport Harbor. The TMDL analysis has been submitted to EPA for final approval.

The U.S. Environmental Protection Agency (EPA) hereby approves Connecticut's TMDL dated September 12, 2007. EPA has determined that this TMDL meets the requirements of Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations (40 CFR Part 130). Attached is a copy of our approval documentation.

This TMDL analysis is based upon a variation of Connecticut's methodology entitled, *Development of Total Daily Maximum Loads (TMDLs) for Indicator Bacteria in Contact Recreation Areas Using the Cumulative Frequency Distribution Function Method (November 8, 2005)*. This is the first application of this modified method to a coastal harbor with designated swimming and shellfishing areas. The harbor was not impaired for its recreational use, but solely for shellfish harvesting. The comprehensive hydrodynamic and pollutant transport study further supports the analysis used to calculate the TMDLs.

EPA supports Connecticut's efforts to use TMDLs as tools to address impairment of a coastal harbor by elevated levels of fecal coliform stemming from stormwater and nonpoint source pollution. My staff and I look forward to continued cooperation with the CT DEP in exercising our shared responsibility of implementing the requirements under Section 303(d) of the CWA.

If you have any questions regarding this approval, please contact Steve Silva at (617) 918-1561 or have your staff contact Mary Garren at (617) 918-1322. Thank you very much.

Sincerely,

/s/

Stephen S. Perkins, Director  
Office of Ecosystem Protection

attachment

cc with attachment:  
Paul Stacey, CT DEP  
Lee Dunbar, CT DEP  
Traci Iott, CT DEP  
Kelly Streich, CT DEP  
Steve Silva, EPA  
Mary Garren, EPA

## EPA NEW ENGLAND'S TMDL REVIEW

**TMDL:**        **A Total Daily Maximum Load Analysis for Southport Harbor Shellfishing Areas – Fairfield, Connecticut**

CT Waterbody Segment on the State of Connecticut 2004 and 2006 List of Connecticut Water Bodies Not Meeting Water Quality Standards (303(d) of the Federal Clean Water Act):

**Waterbody segment ID** - Southport Harbor & offshore\_04 (CT7108-E\_04)

**Location** - Town of Fairfield, Connecticut

**Watershed Towns** - Fairfield, Westport, Easton, Trumbull, and Monroe, Connecticut

**STATUS:**     Final

**IMPAIRMENT/POLLUTANT:**    Impairment of shellfish harvesting for direct consumption where authorized. The Total Daily Maximum Loads (TMDLs) are proposed for indicator bacteria – Fecal coliform

### **BACKGROUND:**

The Connecticut Department of Environmental Protection (CTDEP) submitted to EPA New England the final TMDL analysis for Southport Harbor shellfishing areas with a transmittal letter dated September 24, 2007. Levels of indicator bacteria, Fecal coliform, in excess of Water Quality Criteria have lead to closure of shellfish beds and are the focus of these TMDL calculations. EPA New England concurs with the content of the TMDL analysis.

The Connecticut Department of Environmental Protection (CTDEP) released a draft TMDL dated April 16, 2007 for public review on May 7, 2007. Key stakeholders received copies of the document in the mail. The draft TMDL was posted on the Department's web site. The public comment period closed on June 22, 2007. CTDEP prepared a response to public comment which was submitted along with the final TMDL to EPA. All comments from the public were taken into account in the Response to Comments and the final TMDL submission. In addition to the TMDL analysis itself, the submittal included supporting documents, either directly or by reference, among which were:

- Applied Science Associates, Inc., 2005. *Southport Harbor Hydrodynamic and Pollutant Transport Modeling Study*. Narragansett, RI 02882.
- Connecticut Department of Agriculture, 2005. Annual Assessment of the Shellfish Growing Waters in Fairfield, Connecticut. Bureau of Aquaculture, Rogers Avenue, Milford, CT 06460.
- Connecticut Department of Environmental Protection, 2006. *Water Quality Report to Congress* – Includes Impaired Waters List (Appendix C). Bureau of Water Management, 79 Elm Street, Hartford, CT 06106-5127  
[http://www.ct.gov/dep/lib/dep/water/water\\_quality\\_management/305b/2006\\_305\(b\)fullpl](http://www.ct.gov/dep/lib/dep/water/water_quality_management/305b/2006_305(b)fullpl)

[usapps.pdf](#)

- Connecticut Department of Environmental Protection, 2005. *Development of Total Maximum Daily Loads (TMDLs) for Indicator Bacteria in Contact Recreation Areas Using the Cumulative Distribution Function Method*. Bureau of Water Management, 79 Elm Street, Hartford, CT 06106-5127. (See Appendix B of the Allen Brook Pond, Allen Brook, Gay City Pond, and Schreeder Pond TMDL.)  
[http://www.ct.gov/dep/lib/dep/water/tmdl/tmdl\\_final/allenbrookfinal.pdf](http://www.ct.gov/dep/lib/dep/water/tmdl/tmdl_final/allenbrookfinal.pdf)
- Connecticut Department of Environmental Protection, 2005. *A Total Maximum Daily Load Analysis for the Mill River, Rooster River, and Sasco Brook*. Bureau of Water Management, 79 Elm Street, Hartford, CT 06106-5127.  
[http://www.ct.gov/dep/lib/dep/water/tmdl/tmdl\\_final/swebasintmdlfinal.pdf](http://www.ct.gov/dep/lib/dep/water/tmdl/tmdl_final/swebasintmdlfinal.pdf)

The following review explains how the TMDL submission meets the statutory and regulatory requirements of TMDLs in accordance with Section 303(d) of the Clean Water Act, and EPA's implementing regulations in 40 CFR Part 130.

**REVIEWER:** Mary Garren (617-918-1322) email: garren.mary@epa.gov

## REVIEW ELEMENTS OF TMDLS

*Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations at 40 C.F.R. § 130 describe the statutory and regulatory requirements for approvable TMDLs. The following information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations, and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation.*

### 1. Description of Waterbody, Pollutant of Concern, Pollutant Sources and Priority Ranking

*The TMDL analytical document must identify the waterbody as it appears on the State/Tribe's 303(d) list, the pollutant of concern and the priority ranking of the waterbody. The TMDL submittal must include a description of the point and nonpoint sources of the pollutant of concern, including the magnitude and location of the sources. Where it is possible to separate natural background from nonpoint sources, a description of the natural background must be provided, including the magnitude and location of the source(s). Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation. The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as: (1) the assumed distribution of land use in the watershed; (2) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources; (3) present and future growth trends, if taken into consideration in preparing the TMDL; and, (4) explanation and analytical basis for expressing the TMDL through surrogate measures, if applicable. Surrogate measures are parameters such as percent fines and turbidity for sediment impairments, or chlorophyll *a* and phosphorus loadings for excess algae.*

Shellfish beds in Southport Harbor, Fairfield, Connecticut are impaired for shellfish harvest for direct human consumption due to the presence of elevated levels of Fecal coliform. Levels of Fecal coliform in water exceed indicator bacteria criteria contained in the Connecticut Water Quality Standards (WQS). Failure to meet WQS prohibits the water from meeting its designated use of shellfish harvesting. Southport Harbor was identified as impaired on the State of Connecticut 2004 List of Connecticut Water Bodies Not Meeting Water Quality Standards

(§303(d) List), as well as on the 2006 List. The 2006 List was approved by EPA on September 21, 2007. CTDEP prioritized Southport Harbor on the 2004 §303(d) List for TMDL development within two years if warranted. It remains on the 2006 List as a high priority.

There are two State-designated swimming beaches located in Southport Harbor. They are Sasco Hill Beach and Southport Beach. The Town of Fairfield also manages recreational shellfishing areas at both beaches. Elevated bacteria levels have led to shellfishing restrictions and shellfish bed closures. The public beaches have remained open despite the closure of shellfish beds.

There are two major tributaries leading to Southport Harbor. Mill River is the largest source of freshwater inflow to the harbor. The mouth of the Mill River separates Sasco Hill Beach to the north from Southport Beach to the south. Sasco Brook enters the harbor at the southern end of Southport Beach. Sasco Brook contributes somewhat less freshwater than the Mill River. There is another small tributary to the north of the beaches that provides negligible freshwater input to the harbor.

Waterbody and watershed specific information is provided in Appendix A of the TMDL document. All of the communities within the watersheds are MS4 urban communities subject to the Phase II Stormwater General Permit. All urban stormwater discharges are therefore regulated under NPDES Phase II. Point sources of indicator bacteria in the watershed are MS4-regulated urban runoff and industrial discharges of stormwater. Nonpoint source discharges include sheet flow run-off, improper handling of pet waste, wildlife, and any illicit discharges or improperly functioning septic systems (pages 33-35, TMDL document).

**Assessment:** EPA concludes that the TMDL document meets the requirements for describing the TMDL waterbody segment, pollutants of concern, identifying and characterizing sources of impairment, and priority ranking.

## **2. Description of the Applicable Water Quality Standards and Numeric Water Quality Target**

*The TMDL submittal must include a description of the applicable State/Tribe water quality standard, including the designated use(s) of the waterbody, the applicable numeric or narrative water quality criterion, and the antidegradation policy. Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation. A numeric water quality target for the TMDL (a quantitative value used to measure whether or not the applicable water quality standard is attained) must be identified. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, usually site specific, must be developed from a narrative criterion and a description of the process used to derive the target must be included in the submittal.*

Southport Harbor shellfishing areas are classified as approved and conditionally approved areas SB/SA, with a goal of SA. Achieving these designated uses for the shellfish beds is the goal of this TMDL analysis. Direct shellfish harvest is currently not allowed in any area of the harbor. This is inconsistent with the State standards. Shellfishing area classifications in the State are determined by the Connecticut Department of Agriculture, Bureau of Aquaculture (DA/BA). CTDEP includes Fecal coliform criteria, as set by the DA/BA, in its water quality standards. These criteria are (1.) Fecal coliform geometric mean < 14 col/100 ml, and (2.) not more than 10% of all Fecal coliform results may be greater than the 90<sup>th</sup> percentile value of 43 col/100 ml.

Classification dictates specific sample collection requirements as set by the DA/BA. (See Section 8 on the TMDL's monitoring plan below.)

**Assessment:** EPA concludes that Connecticut has properly presented its numeric water quality standards and has made a reasonable and appropriate interpretation of its narrative water quality criteria for the designated uses of Southport Harbor.

### 3. Loading Capacity - Linking Water Quality and Pollutant Sources

*As described in EPA guidance, a TMDL identifies the loading capacity of a waterbody for a particular pollutant. EPA regulations define loading capacity as the greatest amount of loading that a water can receive without violating water quality standards (40 C.F.R. § 130.2(f)). The loadings are required to be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. § 130.2(i)). The TMDL submittal must identify the waterbody's loading capacity for the applicable pollutant and describe the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In most instances, this method will be a water quality model. Supporting documentation for the TMDL analysis must also be contained in the submittal, including the basis for assumptions, strengths and weaknesses in the analytical process, results from water quality modeling, etc. Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation.*

*In many circumstances, a critical condition must be described and related to physical conditions in the waterbody as part of the analysis of loading capacity (40 C.F.R. §130.7(c)(1)). The critical condition can be thought of as the "worst case" scenario of environmental conditions in the waterbody in which the loading expressed in the TMDL for the pollutant of concern will continue to meet water quality standards. Critical conditions are the combination of environmental factors (e.g., flow, temperature, etc.) that results in attaining and maintaining the water quality criterion and has an acceptably low frequency of occurrence. Critical conditions are important because they describe the factors that combine to cause a violation of water quality standards and will help in identifying the actions that may have to be undertaken to meet water quality standards.*

The TMDLs are the percent reductions in indicator bacteria (fecal coliform) necessary to achieve bacteria criteria as contained within Connecticut's water quality standards. TMDLs were calculated for two locations within Southport Harbor. Percent reductions necessary in indicator bacteria (fecal coliform) are calculated for two sampling locations within Southport Harbor. The sampling locations are located at the mouth of Sasco Brook estuary (Site 1.1) and the inlet to the outer harbor (Site 2.1) (figure 20, TMDL document). These locations have been determined by modeling and dye studies to represent critical locations where if water quality standards are met, then water quality standards will be achieved throughout Southport Harbor.

The percent reductions in fecal coliform needed at sampling **location 1.1** are 59% in the geometric mean and 72% in the 90<sup>th</sup> percentile value (page 32, TMDL document.) The TMDL at Site 1.1 is set such that the SA shellfishing criteria would be met by reducing bacteria concentrations to pre August 2002 levels when bacteria levels and loading did not impair shellfishing use at Southport Beach.

A 36% reduction in the geometric mean and a 77% reduction in the 90<sup>th</sup> percentile value are necessary at sampling **location 2.1**. The TMDL for Site 2.1 is based upon the criteria for shellfishing in approved and conditionally-approved waters (geometric mean < 14 col/100ml and not more than 10% of all Fecal coliform results > 43 col/100ml).

The fecal coliform criteria used by the State of Connecticut are based upon shellfish area

classification. The classification of Southport Harbor necessitates seawater samples be collected during adverse pollution conditions. Adverse conditions are defined as “a state or situation caused by meteorological, hydrological, or seasonal events and point or non-point source discharges that have historically resulted in elevated fecal coliform levels in a particular growing area”. Sample collection during adverse conditions adequately accounts for the need to examine critical conditions within the loading capacity analysis.

Potential sources of fecal coliform bacteria were examined in detail during the modeling study (pages 14-16, TMDL document.) Land use assessment and modeling was used to identify potential sources of indicator bacteria. The pollutant transport component of the model was run in both forward and backward scenarios. The forward mode showed that plumes from the inner harbor and the Mill River would have a greater impact on the shellfishing area than those from Sasco Brook. The backward mode demonstrated that the inner harbor was the likely source of contamination reaching the shellfish beds. Continued sampling of the water column during adverse conditions, along with information on potential sources, will facilitate implementation of the TMDLs.

Statistical analyses were based upon a robust data set of fecal coliform bacteria in water samples. The hydrodynamic and pollutant transport study was appropriately used for the purpose of assessing fecal coliform loading rates and in identifying sources of needed indicator bacteria load reduction. Water quality sampling and dye studies provided site specific information for model input.

EPA’s November 15, 2006 guidance entitled “Establishing TMDL ‘Daily’ Loads in Light of the Decision by the U.S. Court of Appeals for the D.C. Circuit in Friends of the Earth, Inc. v. EPA, et al., No.05-5015, (April 25, 2006) and Implications for NPDES Permits,” recommends that TMDL submittals express allocations in terms of daily time increments. In this case, the TMDL’s % reduction targets are not explicitly expressed in terms of a daily increment. However, they are, in effect, daily targets because they will achieve reductions in stormwater runoff volume in all storm events whenever they occur (e.g., on any given day) throughout the year (pages 1 and 34, TMDL document).

**Assessment:** The TMDL document explains and EPA concurs with the data and analyses used in the development of target indicator bacteria loading rates and in identifying sources of needed fecal coliform reduction. EPA believes that this approach is reasonable because the factors influencing and controlling indicator bacteria impairment were well justified. EPA concludes that the TMDL document sufficiently demonstrates a quantitative link between the loading capacity and achievement of water quality standards.

#### **4. Load Allocations (LAs)**

*EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity allocated to existing and future nonpoint sources and to natural background (40 C.F.R. § 130.2(g) ). Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. § 130.2(g) ). Where it is possible to separate natural background from nonpoint sources, load allocations should be described separately for background and for nonpoint sources.*

*If the TMDL concludes that there are no nonpoint sources and/or natural background, or the TMDL recommends a zero load allocation, the LA must be expressed as zero. If the TMDL recommends a zero LA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero LA implies an allocation only to point sources will result in attainment of the applicable water quality standard, and all nonpoint and background sources will be removed.*

The load allocations in the TMDL analysis for Southport Harbor account for all nonpoint sources and background loading. The LA is calculated using dry weather data and is meant to represent non-stormwater (non-MS4 regulated) sources. Potential sources of Fecal coliform that would contribute to the load allocations are identified as waste from wildlife, illicit discharges, improperly functioning septic systems, and improper handling of domestic pet waste.

Load allocations are calculated for Site 1.1 at the mouth of Sasco Brook estuary and Site 2.1 at the inlet of the Mill River to the outer harbor (figures 6 and 20, TMDL document). The percent reductions in Fecal coliform needed at sampling location 1.1 are 59% in the geometric mean and 74% in the 90<sup>th</sup> percentile value. A comparison of the geometric mean values for Site 1.1 shows that the LA at Site 1.1 is similar to the WLA. (See the next section.) This indicates that the non-point and point sources are equally contributing to bacteria loading at Site 1.1. A 26% reduction in the geometric mean and a 74% reduction in the 90<sup>th</sup> percentile value are necessary at sampling location 2.1. For Site 2.1 (located at the mouth of the inner harbor), a comparison of the geometric mean values shows that the WLA percent reduction is almost double the LA indicating that point sources (wet weather MS4 discharges) have the greatest impact at that location.

**Assessment:** EPA concludes that the TMDL document sufficiently addresses the calculation of the load allocations.

## **5. Wasteload Allocations (WLAs)**

*EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to existing and future point sources (40 C.F.R. § 130.2(h)). If no point sources are present or if the TMDL recommends a zero WLA for point sources, the WLA must be expressed as zero. If the TMDL recommends a zero WLA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero WLA implies an allocation only to nonpoint sources and background will result in attainment of the applicable water quality standard, and all point sources will be removed.*

*In preparing the wasteload allocations, it is not necessary that each individual point source be assigned a portion of the allocation of pollutant loading capacity. When the source is a minor discharger of the pollutant of concern or if the source is contained within an aggregated general permit, an aggregated WLA can be assigned to the group of facilities. But it is necessary to allocate the loading capacity among individual point sources as necessary to meet the water quality standard.*

*The TMDL submittal should also discuss whether a point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur. In such cases, the State/Tribe will need to demonstrate reasonable assurance that the nonpoint source reductions will occur within a reasonable time.*

The waste load allocations for the TMDLs for Southport Harbor account for all point sources, including stormwater discharges regulated under the NPDES program. The WLA is calculated using wet weather data and is meant to represent stormwater (MS4 regulated) sources. Specifically the potential sources of Fecal coliform that would contribute to the waste load



allocations are regulated stormwater discharged through pipes under the MS4 permit. The towns of Westport and Fairfield maintain regulated stormwater discharges. One industrial facility, Jelliff, discharges stormwater under the General Permit for the Discharge of Stormwater associated with Industrial Activities under the municipal storm drain system.

Waste load allocations are calculated for Site 1.1 at the mouth of Sasco Brook estuary (Site 1.1) and Site 2.1 at the inlet of the Mill River to the outer harbor (figures 6 and 20, TMDL document). The percent reductions in Fecal coliform needed at sampling location 1.1 are 61% in the geometric mean and 66% in the 90<sup>th</sup> percentile value. A 50% reduction in the geometric mean and a 79% reduction in the 90<sup>th</sup> percentile value are necessary at sampling location 2.1.

**Assessment:** EPA concurs that the WLA components of the TMDLs are appropriately set to assure attainment of water quality standards.

## 6. Margin of Safety (MOS)

*The statute and regulations require that a TMDL include a margin of safety to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA § 303(d)(1)(C), 40 C.F.R. § 130.7(c)(1)). EPA guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.*

Bacteria decay and die-off is documented to occur in estuarine waters. A 1998 study in Rhode Island documents a decay coefficient of 0.2-day<sup>-1</sup> during summer dry conditions when conditions are best for bacteria growth. CTDEP has used the conservative assumption that no bacteria die-off takes place to provide an implicit Margin of Safety.

Water from Long Island Sound mixes with water in the estuary, particularly during flood and high tide conditions. Data confirms that water from the Sound does not contain significant concentrations of bacteria. CTDEP makes another conservative assumption in calculation of the TMDLs by not allowing for dilution of water in the estuary by water from the Sound.

**Assessment:** EPA concludes that the implicit margin of safety for the TMDL analysis is acceptable.

## 7. Seasonal Variation

*The statute and regulations require that a TMDL be established with consideration of seasonal variations. The method chosen for including seasonal variations in the TMDL must be described (CWA § 303(d)(1)(C), 40 C.F.R. § 130.7(c)(1)).*

Seasonal variation has been accounted for in the TMDLs because the TMDLs were developed to be protective year round. Shellfishing takes place year-round in this area, although recreational harvesting is somewhat weather dependent. The TMDLs were calculated based upon data

gathered throughout the entire year. Data used in these TMDLs accounted for both seasonal and annual variability.

**Assessment:** EPA concludes that the TMDLs are protective of all seasons throughout the year.

## 8. Monitoring Plan

*EPA's 1991 document, Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001), and EPA's 2006 guidance, Clarification Regarding "Phased" Total Maximum Daily Loads, recommend a monitoring plan when a TMDL is developed using the phased approach. The guidance indicates that a State may use the phased approach for situations where TMDLs need to be developed despite significant data uncertainty and where the State expects that the loading capacity and allocation scheme will be revised in the near future. EPA's guidance provides that a TMDL developed under the phased approach should include, in addition to the other TMDL elements, a monitoring plan that describes the additional data to be collected and a scheduled timeframe for revision of the TMDL.*

Southport Harbor is not a phased TMDL, but the analysis includes a description of a monitoring plan designed to measure attainment of water quality standards. CTDEP presents specific recommendations for a stormwater sampling program to the towns of Fairfield and Westport. Storm drain monitoring is a requirement of the MS4 permit. Required pollutant parameters for monitoring are listed. Both *E. coli* and Fecal coliform are indicator bacteria recommended for analysis. Stormwater monitoring will help the towns target outfalls where corrective measures will be most effective (page 37, TMDL document). Estuarine surface water monitoring will allow the towns to assess progress towards attainment of water quality standards.

The collection requirements for approved and conditionally approved SB/SA (i.e. goal SA) shellfishing areas as set by the DA/BA are: "A minimum of five (5) seawater samples must be collected annually during adverse pollution conditions. A minimum of 15 seawater samples, collected over a three-year period, during adverse pollution conditions, must be used for a geometric mean. Adverse pollution conditions have been defined by the NSSP-MO as a state or situation caused by meteorological, hydrological, or seasonal events and point or non-point source discharges that have historically resulted in elevated Fecal coliform levels in a particular growing area." (Connecticut Department of Agriculture, Bureau of Aquaculture and Laboratory Services, Shellfishing Area Classifications)

<http://www.ct.gov/doag/cwp/view.asp?a=1369&Q=259170>

Monitoring data and the CT CALM guides the assessment of designated use attainment for all waters in the State. Methods used to calculate TMDLs are not the bases for these decisions as they relate to listing or delisting of a waterbody on the 303(d) List (page 1, method document).

**Assessment:** EPA concludes that the anticipated monitoring by and in cooperation with CT DA/BA and CTDEP is sufficient to evaluate the adequacy of the TMDLs and attainment of water quality standards, although not a requirement of EPA's TMDL approval process.

## 9. Implementation Plans

*On August 8, 1997, Bob Perciasepe (EPA Assistant Administrator for the Office of Water) issued a memorandum, "New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs)," that directs Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired solely or primarily by nonpoint sources. To this end, the memorandum asks that Regions assist States/Tribes in developing implementation plans that include reasonable assurances that the nonpoint source load allocations established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. The memorandum also includes a discussion of renewed focus on the public participation process and recognition of other relevant watershed management processes used in the TMDL process. Although implementation plans are not approved by EPA, they help establish the basis for EPA's approval of TMDLs.*

CTDEP presents a detailed plan for how these TMDLs will be effectively implemented (pages 34 through 37). Effective nonpoint source watershed management and NPDES stormwater management plans are highlighted as the primary mechanisms by which nonpoint and point sources of Fecal coliform will be reduced. Regulated stormwater is discharged to the municipal system by the Towns of Fairfield and Westport and by the Jellif Corporation. Stormwater Management Plans required by Connecticut's NPDES MS4 Permit will address minimum control measures and BMPs appropriate to regulated stormwater management. Municipalities are required by Section 6 (K) of the MS4 permit to amend their Stormwater Management Plans within four months of this EPA approval to implement the TMDL (page 35). References to specific EPA and CTDEP guidance regarding BMP implementation are suggested to assist the municipalities.

The local community has a long history of interest in and actions to improve the health of Southport Harbor. A long-standing pollution abatement committee (PAC), consisting of the Towns of Fairfield and Westport, Natural Resources Conservation Service, Southwest Conservation District, Harbor Watch/River Watch, The Nature Conservancy, CTDEP, local residents and other stakeholders, summarized their accomplishments and a list of action items in 2006 (Appendix C, TMDL document). The Town of Westport also prepared a draft watershed plan in 2006 that will help guide the PAC in restoration efforts of Sasco Brook. The Town of Fairfield Shellfish Commission, the DA/BA, and Harbor Watch/River Watch are active in gathering data and information to assist with implementation efforts. A shoreline survey and stormwater drainage system inspection report commissioned by the Fairfield Shellfish Commission is included as Appendix B to the TMDL document. All these efforts were well-underway before preparation of the TMDL analysis and will continue during implementation.

CTDEP commits to providing technical and educational assistance through their watershed coordinator to the towns and local stakeholders. The coordinator will work to identify if any funding sources are available to assist with monitoring or implementation.

**Assessment:** Addressed, though not required. EPA is taking no action on the implementation plan.

## **10. Reasonable Assurances**

*EPA guidance calls for reasonable assurances when TMDLs are developed for waters impaired by both point and nonpoint sources. In a water impaired by both point and nonpoint sources, where a point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur, reasonable assurance that the nonpoint source reductions will happen must be explained in order for the TMDL to be approvable. This information is necessary for EPA to determine that the load and wasteload allocations will*

*achieve water quality standards.*

*In a water impaired solely by nonpoint sources, reasonable assurances that load reductions will be achieved are not required in order for a TMDL to be approvable. However, for such nonpoint source-only waters, States/Tribes are strongly encouraged to provide reasonable assurances regarding achievement of load allocations in the implementation plans described in section 9, above. As described in the August 8, 1997 Perciasepe memorandum, such reasonable assurances should be included in State/Tribe implementation plans and “may be non-regulatory, regulatory, or incentive-based, consistent with applicable laws and programs.”*

Connecticut’s MS4 Permit provides assurance that reductions in indicator bacteria loading will occur in urban point sources of stormwater through the implementation of the NPDES Program. These point sources are reflected in the TMDL analysis within the WLA. The MS4 permit requires that communities identify minimum control measures in a Stormwater Management Plan that is submitted to CTDEP. The control measures must include identification of appropriate BMPs and a schedule for implementation before January 8, 2009 (page 35, TMDL document). The MS4 permit is a legally enforceable mechanism by which CTDEP can mandate, if necessary, that communities reduce stormwater point sources.

**Assessment:** Reasonable assurance is not necessary for these TMDLs to be approvable, since the point sources are not given less stringent wasteload allocations based on projected nonpoint source load reductions. CTDEP has provided reasonable assurance that water quality standards will be met.

## **11. Public Participation**

*EPA policy is that there must be full and meaningful public participation in the TMDL development process. Each State/Tribe must, therefore, provide for public participation consistent with its own continuing planning process and public participation requirements (40 C.F.R. § 130.7(c)(1)(ii) ). In guidance, EPA has explained that final TMDLs submitted to EPA for review and approval must describe the State/Tribe’s public participation process, including a summary of significant comments and the State/Tribe’s responses to those comments. When EPA establishes a TMDL, EPA regulations require EPA to publish a notice seeking public comment (40 C.F.R. § 130.7(d)(2) ).*

*Inadequate public participation could be a basis for disapproving a TMDL; however, where EPA determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.*

CTDEP has involved the public during the development of the TMDLs and has provided ample opportunities for the public to comment. Finally, CTDEP has provided a clear record of the comments received and provided clear responses to those comments. Comments were only received from the Town of Westport. CTDEP submitted their response to comments document along with the final TMDL analysis. EPA has reviewed the comments and responses and concurs with the conclusions set forth by CTDEP. Therefore, EPA concludes that the State of Connecticut has responded to the comments raised during the public participation process.

**Assessment:** EPA Region 1 concludes that CTDEP has involved the public during the development of the TMDL has provided opportunities for the public to comment on the TMDL,

and has provided reasonable responses to the public comments.

## **12. Submittal Letter**

*A submittal letter should be included with the TMDL analytical document, and should specify whether the TMDL is being submitted for a technical review or is a final submittal. Each final TMDL submitted to EPA must be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final submittal, should contain such information as the name and location of the waterbody, the pollutant(s) of concern, and the priority ranking of the waterbody.*

CTDEP's letter of September 24, 2007 provides all the required information and states that the TMDL analysis is being formally submitted for EPA review and approval.

**Assessment:** EPA concludes that the TMDL submittal letter provides all the necessary information.

<b>Data for Entry in EPA's National TMDL Tracking System and Regional Web Page</b>							
TMDL Water Body Name *		Southport Harbor Shellfishing Areas					
Number of TMDLs*		1					
Type of Pollutant(s) *		Bacteria					
Number of listed causes (from 303(d) list)		1					
Any <u>Information/prevention</u> TMDLs (Y/N)		N					
Lead State		Connecticut					
TMDL Status		Final					
<b>Individual TMDLs listed below (one line per segment-pollutant combination)</b>							
TMDL Segment name	TMDL Segment ID #	TMDL Pollutant ID# & name	TMDL Impairment Cause(s)	Pollutant endpoint	Unlisted ?	CTDEP Point Source & ID#	Segment still listed for something else? (Y/N)
Southport (Harbor & Offshore)_04	CT7108-E_04	Fecal coliform (259)	Fecal coliform	<u>% reduction in Fecal coliform</u> CT7108-E_04 (at location 1.1) Geometric mean 59% 90 <sup>th</sup> percentile 72%  CT7108-E_04 (at location 2.1) Geometric mean 36% 90 <sup>th</sup> percentile 77%		CTDEP MS4 General Stormwater Permit and the General Permit for discharge associated with industrial activities (Jelliff Corporation)	no
TMDL Water Pollution Type		Point & Nonpoint Source (Stormwater)					
Cycle (list date)		2002, 2004, 2006					
Establishment Date (approval)*		Oct 26, 2007					
EPA Developed		No					
Towns affected*		Fairfield, Westport, Easton, Trumbull, and Monroe, CT					

\* = These data fields used in webpage entries