

June 9, 2000

Robert Smith, Chief
Water Bureau/Standards and Planning Division
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 01606

Dear Mr. Smith:

Thank you for the submittal of **A Total Maximum Daily Load Analysis for Sasco Brook, Fairfield and Westport, Connecticut** for fecal coliform. Sasco Brook was included on Connecticut's 1998 303(d) list and targeted for TMDL development by April 1st, 2000. This Total Maximum Daily Load (TMDL) analysis was developed to address the contact recreation and aquatic life support impairments in Sasco Brook due to nonpoint sources of pollution.

The U.S. Environmental Protection Agency New England (EPA New England) hereby approves Connecticut's final TMDL analysis for fecal coliform bacteria relative to contact recreation, received by EPA New England on January 13, 1999. We have determined that the Sasco Brook TMDL developed for fecal coliform bacteria to address contact recreation impairments meets the requirements of §303(d) of the Clean Water Act (CWA), and EPA's implementing regulations (40 CFR Part 130).

The TMDL submittal for contact recreation includes all the required elements of a TMDL; loading capacity, load allocations, waste load allocations, margin of safety seasonal variation, and public participation process. Consistent with EPA policies, the TMDL for contact recreation also includes an implementation plan which addresses the primary nonpoint sources contributing to the impairment. In addition, Connecticut DEP has provided reasonable assurances that the necessary controls will be implemented in a timely manner.

Upon additional review of existing information, Connecticut Department of Environmental Protection (DEP) recognized that the 1998 303(d) listing of Sasco Brook for ALS impairment was based solely upon anecdotal accounts. Given that the basis for the ALS impairment listing was anecdotal, Connecticut DEP will continue to examine Sasco Brook relative to ALS. There are potential options available to address the ALS impairment which are explained below, and in our attachment. We invite the State to further discuss these, and any additional options to resolve any environmental and regulatory concerns for the ALS use impairment. Given these circumstances, and additional details addressed in the following support document (pages 6-7), we are currently deferring action on the ALS use impairment of the TMDL.

Deferring action on the ALS use impairment of the TMDL will allow the State to gather additional information during the implementation of the TMDL for contact recreation that could potentially be used to revise the TMDL to make it complete and address the ALS use impairment. Alternatively, such information could lead to a conclusion that the ALS use impairment does not exist or is unrelated to activities involving fecal coliform, resulting in an amendment of the listing of Sasco Brook for the ALS use impairment. We invite the State to further discuss these, and any additional options to resolve any environmental and regulatory concerns for the ALS use impairment.

My staff and I look forward to continued cooperation with Connecticut DEP in exercising our shared

responsibility to implement the requirements under Section 303(d) of the CWA. If you have any questions or comments regarding the attached approval documentation, please contact me at (617) 918-1500, or Ms. Jeanne Voorhees at (617) 918-1686.

Sincerely,

Linda M. Murphy, Director
Office of Ecosystem Protection

Enclosure

cc: Tom Morrissey, CT DEP
Lee Dunbar, CT DEP
Elizabeth Wikfors, CT DEP
Ron Manfredonia, EPA
Ann Williams, EPA
Lynne Hamjian, EPA
Roger Janson, EPA

**APPROVAL DOCUMENTATION FOR THE
CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION'S
SASCO BROOK TMDL ANALYSIS**

EFFECTIVE DATE: June 9, 2000

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.

*The Connecticut Department of Environmental Protection (DEP) submitted the final **Total Maximum Daily Load Analysis for Sasco Brook, Fairfield and Westport, Connecticut**, dated January 4, 2000. This TMDL was received by the Environmental Protection Agency-New England (EPA-New England) January 13, 2000. Connecticut DEP requested EPA-New England's review and approval of this TMDL for fecal coliform bacteria. The final TMDL submission includes the following documents:*

- *Submittal letter dated January 4, 2000, and received by EPA-New England January 13, 2000*
- *Response to Comments*
- *Summary of Written Comments Received*
- *Sasco Brook Docket, Tuesday, November 30, 1999*
- *Total Maximum Daily Load Analysis for Sasco Brook, Fairfield and Westport, Connecticut*
- *September 2, 1999 Press Release, **DEP to Adopt Nonpoint Strategy for Sasco Brook**, faxed to EPA New England, May 3, 2000.*

The following pages provide EPA New England's supporting documentation justifying the approval of this TMDL under the statutory and regulatory requirements in §303(d) of the Clean Water Act and 40 CFR Part 130. For reasons explained in Section Four below, EPA New England is approving the TMDL to address the contact recreation impairment, but is deferring action on the TMDL as it relates to aquatic life support.

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.

a. Surface Water, Pollutant of Concern, and Priority Ranking

The Sasco Brook watershed is located in southwestern Connecticut and includes portions of the Towns of Fairfield, Westport and Easton. A figure (fig. 1) and description of the Sasco Brook watershed is provided in the TMDL document, pages 1-3.

*Sasco Brook was identified on Connecticut's 1998 303(d) **List of Waterbodies not Meeting Water Quality Standards**, and prioritized for TMDL development by April 1st, 2000 (CTDEP, 1998). The TMDL presented in the final document is proposed for fecal coliform bacteria. Given the strong public interest expressed during the development and adoption of the 1998 303(d) list, and availability of reliable fecal coliform monitoring data, Sasco Brook was identified by DEP for the development of a TMDL by April 2000 (TMDL document, page 1).*

The 1998 303(d) list identifies impairments to aquatic life support (ALS) and contact recreation caused by elevated levels of bacteria likely originating from storm water, failed septic systems, urbanization, habitat alteration, and non-point runoff. This assessment of Sasco Brook was primarily based on fecal coliform bacteria monitoring data collected by local citizens, and supplemental U. S. Geological Survey (USGS) monitoring for two locations in the watershed.

b. Point And Nonpoint Sources: Description, Magnitude, and Location

The TMDL document states that all known sources of fecal coliform bacteria in Sasco Brook originate from non-point sources, and that no point source discharges of industrial or sanitary wastewaters are permitted or known to exist in the basin (TMDL document, pg. 3). Nonpoint sources of impairment were generally identified to include stormwater runoff, domestic animal waste, failed or inadequate septic systems, and natural sources such as birds and wildlife (TMDL document, page 3).

Although storm water is often considered a nonpoint source, it must be recognized that any piped discharges of storm water are, by definition, point sources regardless of whether they are currently subject to requirements of NPDES permits. However, we understand, based on current information, that it was not feasible for Connecticut DEP to meaningfully separate point source storm water runoff from nonpoint source runoff given the existing overlap between these two source categories. For the purposes of this TMDL, EPA New England agrees that it is reasonable to include point source storm water in the nonpoint source category for reporting purposes and describing load allocations. Also, we agree, in this case, that the approach used to identify and

quantify existing loadings source categories is reasonable considering the lack of source specific information available and the very difficult task of providing reasonably accurate estimates of bacteria loadings from the various sources to Sasco Brook. Finally, as described in the TMDL document, as implementation proceeds additional monitoring will occur and continue to identify and locate sources.

EPA New England concludes that the Sasco Brook TMDL submission adequately identifies and describes the point and nonpoint sources of pollution.

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.

a. Description of the Applicable Water Quality Standards

Page 4 of the TMDL document provides an explanation of the surface water quality standards which are applied to Sasco Brook. As explained in the TMDL document, Sasco Brook is a Class A surface water to which total coliform and enterococci criteria apply for drinking water and established bathing areas, respectively. Based on the implementation and interpretation of Connecticut's WQS, DEP explains that Sasco Brook is neither a designated drinking water supply or an established bathing area, and therefore, the associated criteria do not apply. Instead, DEP defaults to fecal coliform bacteria, described in Appendix B, as a general indicator of the sanitary quality in Sasco Brook.

Given that EPA New England does not advocate the use of total coliform as an indicator bacteria for contact recreation, and that DEP did not completely adopt EPA's recommended 1986 enterococcus or E. coli criteria for waters other than established bathing areas, it is not unreasonable for DEP to apply fecal coliform as an indicator bacteria for the purposes of this TMDL. Also, EPA New England is currently reviewing the proposed revisions to Connecticut's WQS which include the recommended 1986 E. coli indicator bacteria criteria for waters, such as Sasco Brook, that are not established bathing areas. The water quality monitoring plan for Sasco Brook includes E. coli monitoring for consistency with the proposed WQS. Additionally, monitoring also includes enterococcus, and fecal coliform sampling and analysis. Connecticut DEP recognizes that revisions to the TMDL may be necessary based on future monitoring data if impairments continue due to E. coli exceedances (see TMDL document, page 12). Connecticut DEP will maintain Sasco Brook on the 303(d) list until it is adequately demonstrated, with monitoring data, that beneficial uses are fully supported (i.e. WQS are attained; see page 13 of the

TMDL document).

b. Applicable Numeric Targets

The TMDL document sets the numeric target equal to the numeric criteria specified in Connecticut's WQS. Based on the numeric criteria presented in Connecticut's WQS, the TMDL establishes endpoints using the following fecal coliform indicator bacteria criteria: geometric mean of 200 colonies/100 ml and the 90th percentile value of 400 colonies/100ml. These numeric criteria are consistent with Connecticut DEP's water quality standards (CT DEP 1997).

c. Antidegradation

An explanation of the antidegradation requirements relative to the Sasco Brook TMDL is provided on page 9 of the TMDL document. As presented in the TMDL document, Connecticut DEP's water quality standards provide antidegradation policy requiring that where existing water quality meets or exceeds standards, the existing high quality will be maintained (TMDL document page 9). This is especially applicable in the upper watershed of Sasco Brook, where fecal coliform counts are below criteria. Connecticut DEP states that watershed management activities, including implementation measures identified by the TMDL document, apply to all areas within the Sasco Brook watershed to the extent that they are effective in protecting and maintaining existing high water quality conditions.

3. Loading Capacity - Linking Water Quality and Pollutant Sources

As described in EPA guidance, a TMDL identifies the loading capacity (LC) 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.

a. Loading Capacity

The loading capacity for fecal coliform is expressed as a concentration and set equal to the numeric criteria as identified in Appendix B of Connecticut's WQS (CT DEP 1997). The LCs for each sub-watershed appear on Table 1 of the TMDL document. For the annual geometric mean fecal coliform endpoint, the LC is set equal to 200 colonies/100 ml and for the annual 90th percentile fecal coliform endpoint, the LC is set equal to 400 colonies/100 ml.

Loadings are required to be expressed as either mass-per-time, toxicity or other appropriate measure (40 C.F.R. § 130.2(i)). For the purpose of this TMDL, Connecticut DEP expressed the LC in terms of concentrations to reflect the numeric criteria in the Connecticut WQS. Use of a single calculated loading would not reflect the criteria as expressed in the WQS because it would be calculated for a single flow value; whereas the criteria are based on a representative sample that includes variable flow conditions. Also, this approach provides a clear link between the attainment of water quality standards and the allowable magnitude of fecal coliform rather than if expressed as a mass bacteria loading (i.e., 10¹⁰ organisms/day). EPA New England concludes that the application of concentration for the LC is consistent with Connecticut's WQS for fecal coliform bacteria and the LC s are sufficient to meet WQS.

b. Strengths and Weaknesses

The TMDL document does not specifically address the strengths and weaknesses of the approach. However, EPA New England recognizes that one strength is the required bacteria load reductions are based on actual monitoring data collected by members of the watershed group who have extensive local knowledge of Sasco Brook.

Although the TMDL document specifies that surveillance monitoring will be conducted to identify sources of elevated indicator bacteria, a potential weakness for this TMDL is the current absence of source specific water quality data which could be used to target and prioritize control measures.

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. *As stated in the TMDL document (page 6), 100 percent of the pollutant loading to Sasco Brook was allocated to nonpoint sources, including natural background, in each of the sub-watersheds. The LAs were set equal to the annual geometric mean for fecal coliform (200 colonies/100 ml) and*

for the annual 90th percentile for fecal coliform (400 colonies/ 100 ml).

*The **Technical Support Document for Water Quality-based Toxics Control** (US EPA, 1991) discusses the inherent difficulties with setting LAs for nonpoint sources. This document recognizes that the LAs for nonpoint sources can be difficult to assess because the information needed to describe runoff associated with the high flow storm events does not exist. Lack of this information is typically due to the high variability of the events. Even if Connecticut DEP elected to use a site-specific model to estimate the nonpoint source loadings of fecal coliform, it would be difficult to calibrate the model without intensive monitoring studies. Also, simplistic correlations between loading and rainfall can be, by their statistical nature, unreliable for estimating low frequency events (US EPA 1991). Given the lack of precise fecal coliform loadings from nonpoint sources, and the inherent difficulties associated with impairments solely due to nonpoint sources, Connecticut DEP elected to take a practical approach requiring an estimated percent reduction of baseline fecal coliform necessary to meet water quality criteria.*

As discussed in section 1b of this document, nonpoint sources and associated LAs likely include inadvertent point source discharges from storm water. This is reasonable considering that it was not feasible to meaningfully separate point source storm water runoff from nonpoint source runoff given the existing overlap between these two source categories. For the purposes of this TMDL, EPA New England agrees that it is reasonable to include point source storm water in the nonpoint source category for reporting purposes and describing load allocations.

The TMDL establishes load allocations for nonpoint sources and concludes that these reductions will ensure the attainment of WQS for both impaired uses (contact recreation and aquatic life support). Following an inquiry by EPA New England, Connecticut DEP examined the record further and reported that the aquatic life support impairment was based on anecdotal accounts (personal communication, Elizabeth Wikfors Connecticut DEP). EPA New England recognizes that the States have the discretion to list surface waters based on various levels of water quality information. However, as for any impairment, it is necessary to have an understanding of the nature and cause(s) of the impairment to develop a complete TMDL. In the case of the Sasco Brook, the nature of the aquatic life support impairment and its causes are unknown, and the TMDL does not explain how implementation will result in the attainment of ALS. Also, although EPA New England recognizes the use of surrogate measures for expressing a TMDL, as proposed in this TMDL document, the use of fecal coliform as a surrogate measure for ALS is not fully developed (i.e. the TMDL document does not provide an adequate explanation or analytical basis for expressing the TMDL through surrogate measures for ALS).

Given the absence of information necessary to fully develop, document, and support the ALS portion of the TMDL, it appears that it was not possible for the State to address all of the required elements of a TMDL under Section 303(d) for this impairment. Therefore, EPA New England is not taking action on the TMDL as it relates to the ALS impairment.

Additional information gathered during the implementation of the TMDL to address the contact recreation impairment may enable the State to revise the TMDL to address the ALS use

impairment. Alternatively, such information may lead to a conclusion that the ALS use impairment does not exist or is unrelated to activities involving fecal coliform bacteria, resulting in an amendment of the listing of Sasco Brook for ALS use impairment.

EPA New England concludes that the LAs represent fecal coliform reductions necessary to meet the numeric targets and attain water quality standards for contact recreation.

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 TMDL document addresses WLAs on page 6. The Sasco Brook watershed does not include any continuous point source discharges, therefore, no WLA has been specified in the TMDL. However, as indicated, there are likely some point source storm water discharges which are included in the LA for reasons discussed in sections 1b and 4 of this document.

All communities in the Sasco Brook watershed (Fairfield, Westport and Easton) are subject to the Storm Water Phase II Rule, which requires designated municipalities and construction activities to obtain a National Pollution Discharge Elimination System (NPDES) permits. Regulated communities must develop, implement and enforce a storm water management program designed to reduce the discharge of pollutants from storm drainage systems to the maximum extent practicable to protect water quality.

Coverage under the Phase II Rule will require communities to develop and implement more comprehensive storm water management programs that must include, at a minimum, the following elements:(1) public education and outreach, (2) public participation/involvement, (3) Illicit discharge detection and elimination, (4) construction site runoff control, (5) post-construction

runoff control; and, (6) pollution prevention/good housekeeping.

Implementation measures required by the Phase II Rule, are expected to contribute to the overall reductions in fecal coliform bacteria experienced in Sasco Brook.

EPA New England concludes that setting the WLAs to zero is a reasonable approach, at this time, for the Sasco Brook watershed.

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.

The TMDL document discusses MOS on page 6. Implied MOS is provided by developing LCs independently in sub-watersheds, since controls implemented in upstream sub-watersheds will reduce fecal coliform, and other bacterial indicator densities in downstream sub-watersheds. Although not discussed in the TMDL document, since portions of the upper watershed are currently meeting WQS, any sources targeted for implementation will provide additional MOS, and ultimately provide an added benefit to the downstream sub-watersheds.

Explicit MOS is provided in those sub-watersheds where current monitoring data demonstrate that current pollutant loading is below the LC (i.e. the numerical difference between the current baseline condition and LC). This approach does not allow for increases in pollutant loadings from any sources to segments of the brook currently meeting, or exceeding criteria.

EPA New England concludes that adequate MOS is provided in the TMDL because the calculated fecal coliform reductions reflect actual conditions since they are based on substantial ambient data, and the effect of reductions in are considered independent within each sub-watershed.

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 is discussed on page 8 of the TMDL document. Loading reductions were quantified and evaluated on an annual basis, and therefore, for the purposes of this TMDL, the loadings are independent of environmental conditions and no adjustment of the TMDL was made to account for seasonal differences.

Further, the expression of the TMDL in terms of concentrations set equal to the water quality standards applies for all seasons and climatic conditions. Therefore, EPA New England concludes that the TMDL is protective of water quality for all seasonal conditions.

8. Monitoring Plan for TMDLs Developed Under the Phased Approach

EPA's 1991 document, *Guidance for Water Quality-Based Decisions: The TMDL Process* (EPA 440/4-91-001), recommends a monitoring plan when a TMDL is developed under the phased approach. The guidance recommends that a TMDL developed under the phased approach also should provide assurances that nonpoint source controls will achieve expected load reductions. The phased approach is appropriate when a TMDL involves both point and nonpoint sources and the point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur. EPA's guidance provides that a TMDL developed under the phased approach should include a monitoring plan that describes the additional data to be collected to determine if the load reductions required by the TMDL lead to attainment of water quality standards.

Monitoring plans for Sasco Brook are discussed on page 12 of the TMDL document. Monitoring consists of surveillance monitoring and trend monitoring to identify local sources of contamination requiring remediation, and assess the attainment of the WQS, respectively. In particular, monitoring will include collecting samples twice per month to establish the annual geometric mean and 90th percentile fecal coliform values for comparison with the LCs. Sample analysis will include fecal coliform, enterococcus, and E. coli. Other parameters will be examined and include turbidity and nutrients. Evaluations will be conducted on an annual basis to assess the progress in achieving the bacterial reductions established by the TMDL.

EPA New England supports the conditions of this monitoring approach because it will adequately evaluate the adequacy of the TMDL, and the efficacy of the proposed implementation as specified in the TMDL.

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.

*Although not required or approved by EPA, the TMDL document provides a discussion of the implementation plan for Sasco Brook on page 11, and recognizes the unique responsibilities for the DEP, Towns, and individuals. Further, implementation measures have been identified by the Town of Fairfield in the **Sasco Brook Watershed Water Quality Management Plan** (November 18, 1999) and provides assurance that implementation measures to improve water quality will be effectively executed at the local level. Additional implementation is provided through the **Sasco Brook Pollution Abatement Committee Action Plan**. Features in these management plans include, but are not limited to the following:*

- *the development of educational information for distribution to local residents addressing the proper functioning and maintenance of septic systems,*
- *support for and publicize a Town ordinance regarding proper disposal of pet animal waste,*
- *development and distribution of proper procedures for storing and disposing large domestic animal wastes,*
- *initiation of a storm drain retrofit through replacement of current drains with swirl concentration/catch basin configuration,*
- *quarterly documentation and publication provided to local residents describing the improvements in water quality and the status of Town activities to address water quality*

*The resulting implementation measures identified by the **Sasco Brook Watershed Water Quality Management Plan Sasco Brook Pollution Abatement Committee Action Plan** include reasonable assurances that the nonpoint source load allocations established in the TMDL document for waters impaired solely or primarily by nonpoint sources will in fact be achieved.*

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.”

Although it is not required for approving the Sasco Brook TMDL, since Sasco Brook is solely impaired by nonpoint sources, Connecticut DEP elected to provide reasonable assurances that fecal coliform load reductions will be achieved (see pages 9 -10 of the TMDL document and Appendices).

*Reasonable assurance is achieved by two means: financial commitments and the establishment of dedicated committees who are willing to work cooperatively with the Connecticut DEP, volunteer organizations, and Town boards and commissions. The Clean Water Act (CWA) Section 319 grant funds, associated municipal matching funds, and CWA 104(b) grant funds have already been allocated for the implementation of this TMDL, and currently exceed \$100,000.00. Also, reasonable assurances that load reductions will be achieved are provided by the dedication and commitment of the Towns as evidenced by the establishment of various task forces, and the **Sasco Brook Watershed Water Quality Management Plan and Sasco Brook Pollution Abatement Committee Action Plan.***

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.

Public participation for the Sasco Brook TMDL began in 1998 with comments regarding the listing of Sasco Brook on the 1998 303(d) list. Given the interest in Sasco Brook and its clean-up, the public's involvement continues and has focused upon the TMDL and its implementation. The public participation process for the Sasco Brook TMDL has generally included the following measures:

- *September 2, 1999 press release, **DEP to Adopt Nonpoint Strategy for Sasco Brook**, announcing the development of the TMDL for the brook, and that it was available for public comment until October 15, 1999.*
- *Direct mailing of copies of the draft TMDL to interested individuals and groups inviting public comment;*
- *Provisions for many public meetings;*
- *Preparation of summary of public comment and Department's response;*
- *Submission of Connecticut DEP's responses to EPA for review and comment.*

As illustrated in the Sasco Brook Docket accompanying the TMDL document, the attached Press Release, and the discussion of reasonable assurances, Connecticut DEP has provided many occasions and opportunities for the public involvement. Many meetings were held by Connecticut DEP to address the development of the TMDL and to solicit comments on the preliminary, draft and final TMDL. The public was involved through the establishment of the Sasco Brook Pollution Abatement Committee and Sasco Brook Task Force. Many news articles appeared in local newspapers concerning the pollution issues, and proposed clean-up measures for Sasco Brook. Separate meetings were held to discuss the development of the TMDL, and Connecticut DEP provided copies of the preliminary, draft and final TMDL to interested individuals and groups through mass mailings. Connecticut DEP did extensive public outreach for this TMDL.

EPA-New England concludes that Connecticut DEP provided for public participation consistent with the its own public participation requirements. As illustrated in the Sasco Brook Docket, and Press Release, it is reasonable to conclude that the elements of the State's public participation process were addressed. EPA concludes that Connecticut DEP has done an admirable job of involving the public during the development of the TMDL, and has provided sufficient opportunities for the public to comment on the TMDL.

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.

The submittal letter identified the TMDL document as a final TMDL submittal under Section 303(d) of the Clean Water Act for EPA review and approval.

REFERENCES

- Connecticut Department of Environmental Protection. 1997. Connecticut Water Quality Standards.
- Connecticut Department of Environmental Protection. 1996. Connecticut Waterbodies not Meeting

Connecticut Water Quality Standards.

Connecticut Department of Environmental Protection. 1998. Connecticut Waterbodies not Meeting Connecticut Water Quality Standards.

United States Environmental Protection Agency. 1991. Technical Support Document for Water Quality-based Toxics Control. Office of Water. EPA/505/2-90-001.