April 7, 2005

Ms. Alicia Good
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, RI 02908-5767

Dear Ms. Good:

I am hereby approving the Rhode Island Department of Environmental Management's (DEM) submission of the final TMDLs for *Portsmouth Park* and *The Cove-Island Park*, dated March 2005. As noted in our approval documentation, DEM asserts that shellfish closures in these waters are caused by failing septic systems, illegal sewer connections and other sources of untreated and inadequately treated wastewater. The TMDLs establish load and waste load allocations of zero for these sources.

The TMDL acknowledges that additional monitoring is required to ensure that water quality standards are met as remedial actions are implemented. For example, the effect of storm water on water quality will be evaluated through this additional monitoring. Should it be necessary, load and waste load allocations for nonpoint sources and storm water, respectively, will be established at that time.

Please feel free to contact me or my staff we any questions regarding this action.

Sincerely,

Linda Murphy, Director
Office of Ecosystem Protection

Enclosure

cc: Elizabeth Scott, RIDEM
Angelo Liberti, RIDEM

TMDL: Sakonnet River, Rhode Island

The Cove-Island Park	Fecal coliform (Final)
Portsmouth Park	Fecal coliform (Final)

Date of Review: April 1, 2005

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 chlorophyl *a* and phosphorus loadings for excess algae.

Comment: The TMDL report prepared by Rhode Island, dated September 2003, includes TMDLs for two waterbody segments on the Sakonnet River, The Cove-Island Park (109 acres) and Portsmouth Park (180 acres). The TMDL document identifies the pollutant of concern (page 1), the priority ranking (page 1), and the waterbodies as they appear on the State's 303(d) list (page 1).

The TMDL submittal includes a description of the point and nonpoint sources contributing to the water quality impairments (Page 30-32). As documented on page 30 of the TMDL report, "threats to water quality identified by the shellfish program shoreline surveys include illicit connections to stormdrains and failing septic systems located in areas of high groundwater in Portsmouth Park and in unsuitable soils in Island Park. In addition, runoff from the two densely developed neighborhoods may contribute to elevated fecal coliform levels during wet weather, however data indicate that standards are met in wet weather. This will be further evaluated after the illicit connections and failing septic systems are corrected. The continued water quality monitoring and future shoreline surveys will be used to help evaluate the effectiveness of the recommendations of the TMDL in restoring designated uses and attaining water quality standards."

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.

Comment: The TMDL document includes a description of the applicable water quality standards (page 2), designated uses (page 2), the numeric water quality criterion (page 2 - same as WQS), and the antidegradation policy (page 2).

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 condition*s 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.

Comment: The loading capacity in this TMDL is expressed as a concentration set equal to the States water quality standard — a geometric mean of 14/100 mL with no more than 10% of the samples exceeding 49/100 mL (p. 34). As described in 40 CFR 130.2, the loadings are required to be expressed as either mass-per-time, toxicity or other appropriate measures (40 C.F.R. § 130.2(i)). For this bacteria TMDL, the loading capacity is expressed as concentration, which is an acceptable alternative to mass-per-time (p. 34).

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.

Comment: Untreated and inadequately treated wastewater that discharge as non-point sources are to be eliminated. The Load Allocation (LA) for these sources is set equal to zero (p. 36). The TMDL acknowledges that additional monitoring is required to demonstrate that water quality standards are met as remedial actions are implemented (see: 8. Monitoring Plan for TMDLs Developed Under the Phased Approach, below). If follow-up monitoring indicates that water

quality standards are not being attained, a load allocation for these sources will be established at that time (p. 36).

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.

Comment: Known point sources are municipal storm sewers and illegal discharge pipes. A Wasteload Allocation (WLA) of zero is set for illegal direct discharges, illegal connections to storm drains, and failing septic systems that flow (via groundwater or overland flow) into storm drains. The State asserts that contamination levels measured in municipal storm sewers are the result of failing septic systems and illegal connections and a waste load allocation for storm water is not proposed at this time. To control storm water, the town of Portsmouth and the RI Department of Transportation are required to develop and implement a storm water management plan consistent with EPA's Phase II storm water regulations. The TMDL acknowledges that additional monitoring is required to demonstrate that water quality standards are met as remedial actions are implemented (see: 8. Monitoring Plan for TMDLs Developed Under the Phased Approach, below). If follow-up monitoring indicates that water quality standards are not being attained, a waste load allocation for these sources will be established at that time (p. 35).

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.

Comment: Implicit MOS is provided in this TMDL because the TMDL requires the complete elimination of all wastewater sources (p. 36).

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)).

Comment: The TMDL sets allocations for all known sources of wastewater independent of seasonal conditions (pp. 36-37). EPA believes that seasonal variation is adequately addressed.

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.

Comment: The TMLD contains the following language regarding additional monitoring:

> *"Additional monitoring is required to ensure that water quality standards are met as remedial actions are accomplished. Monitoring by RIDEM will be the principle method of obtaining the data necessary to track water quality conditions in the watershed. Also, as proposed BMPs are installed in the watershed, post construction*

influent and effluent sampling may be required to assess the effectiveness of the selected technology.

"In accordance with National Shellfish Sanitation Program (NSSP) requirements, the RIDEM Shellfish Monitoring Program will monitor water quality and conduct shoreline surveys. RIDEM will ensure that ambient sampling stations are located adjacent to point sources and effectively evaluate all nonpoint sources of pollution, including the addition and/or modification of sampling locations, as necessary. Shoreline surveys entail the evaluation of the effect of each actual and potential source of pollution on shellfish waters including as necessary, the collection of ambient water quality samples. In addition, non-shellfish program data (such as information on potential sources, beach and volunteer monitoring) will be considered and followed up with confirmatory monitoring by RIDEM, following NSSP approved methods, as appropriate.

"The continued water quality monitoring and future shoreline surveys will be used to help evaluate the effectiveness of the recommendations of the TMDL in restoring designated uses and attaining water quality standards. Ultimately, attainment of the designated shell fishing use requires compliance with the Rhode Island water quality standards including ambient water quality criteria and all NSSP requirements (including evaluation of non-shellfish program data/surveys, special sampling site data, beach and volunteer monitoring, as appropriate)."

EPA is willing to assist with monitoring plan design, data collection, and analysis as necessary.

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.

Comment: An implementation plan is provided in the TMDL report.

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."

Comment: No point sources are given less stringent WLAs in this TMDL based on an assumption that nonpoint source load reductions will occur. Therefore, reasonable assurance is not a necessary element of the TMDL approval.

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.

Comment: RIDEM has provided adequate public participation including a 30-day public comment period initiated on June 25, 2003. RIDEM did not receive any written comments, but did respond to verbal comments received at the public meeting.

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.

Comment: A submittal letter with the necessary requirements has been provided.

13. Other Comments: