

Source and Effective Date

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See: 28 N.J.R. 729(a), 28 N.J.R. 2779(a), 28 N.J.R.
3494(a), 28 N.J.R. 3858(a), 29 N.J.R. 2142(a).

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7:15-7.1 Purpose and scope

This subchapter sets forth two general approaches for the determination of total maximum daily loads (TMDLs) for water quality limited water segments and for other waterbodies pursuant to N.J.A.C. 7:15-7.2(b). A TMDL represents the assimilative capacity of a waterbody or waterbody segment for a single pollutant or pollutant parameter. The TMDL includes the sum of individual wasteload allocations, load allocations, and allocations as applicable to reserve capacity and margin of safety. A TMDL may be developed using either of two general modeling approaches—the basic TMDL approach (see N.J.A.C. 7:15-7.4) or the complex TMDL approach (see N.J.A.C. 7:15-7.5). Both TMDL approaches may be applied on a “watershed” basis, where the TMDL is developed considering all significant point and nonpoint sources of the pollutant parameter of interest within an entire WQLS, multiple linked waterbody segments, or entire watershed. Both TMDL approaches may also be applied on a “site-specific” basis, where the TMDL is developed for a specific reach or location of a WQLS or other waterbody affected by a specific, NJPDES-permitted point source discharge and the analysis is limited to the impact of point and nonpoint sources that are located in the immediate vicinity of that point source. A “basic TMDL” is a TMDL that does not include an analysis of the fate of a pollutant parameter in a WQLS or waterbody. A “complex TMDL” is a TMDL that includes an analysis of the fate and transport of a pollutant parameter in a WQLS or waterbody.

7:15-7.2 General information and public process

(a) TMDLs shall be established for each water quality limited segment identified by the Department in accordance with N.J.A.C. 7:15-6.2(a) and (b). The TMDL process shall be used to ensure that surface water quality standards are attained and maintained. Each TMDL may account for seasonal variations to effluent limitations to the extent allowed under N.J.A.C. 7:14A-13.9 and shall include a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality.

(b) TMDLs may also be established for waterbody segments which have not been identified in accordance with N.J.A.C. 7:15-6.2.

(c) A separate TMDL shall be established for each pollutant parameter identified in accordance with N.J.A.C. 7:15-6.2(c), including thermal loadings, and may be established for other pollutant parameters where these parameters are identified through the public process in (f) below or through supplemental public notice after the TMDL process has commenced. However, more than one TMDL can be developed for a WQLS using a consolidated public process and TMDL modeling approach. Each TMDL shall be developed and approved in accordance with the provisions of this subchapter.

(d) (Reserved)

(e) Any TMDL established for a waterbody segment which includes waters of different (multiple) classifications

shall be developed in such a way as to fully protect the designated and existing uses of any waters of higher classification. Any TMDL established for a stream segment which affects or potentially affects a downstream waterbody segment containing waters of a higher classification and/or waters for which more stringent criteria may apply shall be developed in such a way as to fully protect the designated and existing uses of the downstream waterbody segment. Any TMDL established for a waterbody segment which affects or potentially affects the waters of another state shall be developed in such a way as to fully protect the designated and existing uses of the waters of the adjacent state at the New Jersey border. Any TMDL established for waters under the jurisdiction of the Delaware River Basin Commission or the Interstate Sanitation Commission shall be established in accordance with the prevailing Water Quality Regulations of the respective agency or in accordance with N.J.A.C. 7:9B, whichever is more stringent.

(f) A public process shall be initiated prior to the development of each TMDL which includes the following components:

1. An informal process to identify parties with an interest in the waterbody segment. Where the TMDL will be developed on a watershed basis, a public advisory committee, with subcommittees as appropriate, shall be formed to represent affected parties and to provide input to the Department on policy issues affecting the development of the TMDL, including specific water quality goals to the extent they are adopted under provisions of the Surface Water Quality Standards at N.J.A.C. 7:9B regarding the development of specific uses, criteria or antidegradation and mixing zone policies for the waterbody segment. For TMDLs developed on a site specific basis, an opportunity for written public comment on the same issues shall be substituted for a Public Advisory Committee process;

2. Public notice of the water quality goals for the waterbody segment, the parameters of interest for which a TMDL will be developed, the spatial boundaries of the TMDL, and the analytical approach which will be utilized for the TMDL development; and

3. An informational public meeting shall be scheduled for each waterbody segment or segments where one or more TMDL is planned to be developed on a watershed basis. The Department may also hold such an informational public meeting where a TMDL is planned to be developed on a site-specific basis where sufficient public interest exists.

(g) Each TMDL shall be proposed by the Department as an amendment to the appropriate areawide WQM plan(s) in accordance with N.J.A.C. 7:15-3.4(g).

(h) Where feasible, the TMDL proposal shall include:

1. The various management options and alternatives which will ensure that the surface water quality standards will be attained, including the use of BMPs, the trading of allocations under N.J.A.C. 7:15-7.6(d)3, or the use of water conservation measures;

2. A listing of all pollutant sources discharging into the waterbody segment for which WLAs or individual LAs were developed, and all nonpoint source pollutant categories for which aggregate LAs were developed;

3. An analysis of the margin of safety and/or reserve capacity which has been assigned for each parameter;

4. Calculations of WLAs/LAs developed from the TMDL;

5. Water quality based effluent limitations developed in accordance with N.J.A.C. 7:14A-13.6;

6. Any site specific criteria developed in accordance with N.J.A.C. 7:9B;

7. Any translator mechanisms necessary to convert a criterion expressed as one fraction of a parameter (such as dissolved metal) into another fraction of the same parameter (such as total recoverable metal); and

8. Any modifications to water quality based effluent limitations developed in accordance with N.J.A.C. 7:9B-1.8 or 1.9 or variances determined in accordance with N.J.A.C. 7:14A-11.

(i) Public notice of the TMDL shall be provided in the New Jersey Register and a daily or weekly newspaper within the affected area prior to the public hearing. Each affected point source discharger with an individual NJPDES-Discharge to Surface Water permit approved under N.J.A.C. 7:14A, each municipality within the TMDL project area, and each discharger otherwise identified in the WQLS list adopted pursuant to N.J.A.C. 7:15-6 as a potential contributor of the pollutant parameter for which the TMDL was developed, within an affected area shall be notified by a mailing of the public notice. In addition to any information required by N.J.A.C. 7:15-3.4(g), the public notice shall include the information listed below:

1. The name and address of the Department contact to which comments may be addressed and to which a written request may be made for additional information;

2. The name, location, and NJPDES permit number (where applicable) of each discharger receiving a WLA or individual LA in the TMDL;

3. A summary of the TMDL which includes the preliminary allocation assigned to each pollutant source or to a category or other group of pollutant sources;

4. A brief description of the procedures for comment on the TMDL;

5. The time and place of any public hearing to be conducted in accordance with N.J.A.C. 7:15-3.4; and

6. The procedures for obtaining a copy of the detailed TMDL report, including all calculations and the various management options and alternatives which were considered for the waterbody segment.

(j) The Department, at any time, may utilize the services of a mediator to facilitate reaching a formal agreement on the TMDL among the interested parties.

(k) All TMDLs established in accordance with (a), or (c) above shall be submitted in draft to the USEPA for review and approval at least 30 days prior to the anticipated date of adoption. The Department shall submit the adopted TMDL to the USEPA, which shall have up to 30 days from the date of receipt to render a final decision. Estimated TMDLs (as defined by 40 CFR 130.7(e)) established in accordance with (b) above shall be submitted to USEPA for comment but may be adopted by the Department without USEPA approval.

(l) TMDLs, WLAs, LAs, water quality based effluent limitations, and listings of water quality limited segments established by the USEPA pursuant to 40 CFR 130.7(d) shall be considered to be part of the appropriate areawide WQM plans, but the Governor or Governor's designee may adopt more stringent requirements in such plans pursuant to the procedures in N.J.A.C. 7:15-3.4 (g).

(m) TMDLs, WLAs, LAs, water quality based effluent limitations, and listings of water quality limited segments established by the Delaware River Basin Commission or Interstate Sanitation Commission shall be considered to be part of the appropriate areawide WQM plans, but the Governor or Governor's designee may adopt more stringent requirements in such plans pursuant to the procedures in N.J.A.C. 7:15-3.4 (g).

(n) (Reserved)

(o) TMDLs may be developed by a permittee, applicant for a permit, group of permittees or applicants, watershed associations, or other interested parties regardless of whether the waterbody segment has been identified in accordance with N.J.A.C. 7:15-6.3(b), if the conditions listed in (o)1 through 3 below are satisfied:

1. The proposed TMDL shall conform to all applicable general and specific requirements of this subchapter. Any ambient studies or water quality models utilized in the development of the proposed TMDL shall conform to the requirements of N.J.A.C. 7:14A-2.12;

2. The entity assuming responsibility for TMDL development shall develop and submit to the Department for approval a detailed plan for compliance with the public participation requirements of the TMDL development in accordance with (f) above and the technical requirements of the TMDL development in accordance with N.J.A.C. 7:15-7.3 through 7.7. The plan shall be subject to approval by the Department prior to initiation of any work on the TMDL. Minor project work plan modifications (those that do not substantively change, for example, the scope, geographic coverage, model, monitoring protocol, completion date or public process of the TMDL project) may be approved verbally, with written confirmation, by the Department; and

3. The public process described in (f) through (i) above has not otherwise been initiated.

(p) All TMDLs and associated WLAs and LAs shall comply with all antidegradation, mixing zone and intermittent stream requirements in accordance with N.J.A.C. 7:9B.

(q) All effluent limitations derived from WLAs shall comply with all antibacksliding requirements in accordance with N.J.A.C. 7:14A-13.19.

(r) Nothing in this section shall affect the Department's authority to require a point source discharger to undertake site specific studies in accordance with N.J.A.C. 7:14A.

7:15-7.3 General technical requirements for TMDL development

(a) TMDLs may be established utilizing either a basic TMDL model approach or a complex TMDL model approach. Where a basic TMDL model has been established and a complex TMDL model is subsequently established for the same parameter and the same waterbody segment, WLAs and LAs shall be established using the complex TMDL model and shall replace the WLAs and LAs established using the basic TMDL model. WLAs and LAs established as the result of one complex TMDL model may also replace the WLAs and LAs established using another complex TMDL model where the Department determines that the new WLAs and LAs will result in improved water quality or that the TMDL model better reflects the actual attributes of the waterbody segment.

(b) The spatial boundaries for each TMDL shall be clearly established and shall begin and end at a waterbody segment boundary as defined by the USEPA stream segments database, except where the Department determines on a site specific basis that an alternate spatial boundary is appropriate. TMDLs for adjacent segments may be combined to provide a comprehensive TMDL for all of the affected segments.

(c) The ambient and inflow water quality concentrations for a TMDL model shall be determined in accordance with N.J.A.C. 7:14A, except when the Department determines on the basis of site specific considerations that the data input values should be modified to adequately address the surface water quality standards. The model input concentrations for a statistical model shall be determined from the statistical distribution of the data collected for each parameter in accordance with N.J.A.C. 7:14A.

(d) Except for statistical models, stream design flows for TMDLs shall be determined in accordance with N.J.A.C. 7:9B. For statistical models, the stream design flow may be determined from analysis of waterbody segment flow data in accordance with N.J.A.C. 7:14A-2.12 and shall take into consideration existing or potential impacts on water flows from upstream flow regulation facilities (such as reservoirs) and inter-watershed transfers of water or wastewater.

(e) As a default, maximum facility flows corresponding to the duration of the applicable criteria shall be determined statistically from effluent flow data whenever possible. When such flows cannot be determined, the applicable facility flows shall be determined in accordance with N.J.A.C. 7:14A-13.13. However, the Department may allow alternative flows to be used in the TMDL project, subject to comment through the public participation process in N.J.A.C. 7:15-7.2. Flow projections shall be for 20 years, utilizing the most current, available projection information from the relevant Areawide WQM Plan(s) unless the Department allows an alternative planning horizon for the TMDL project, subject to comment through the public participation process in N.J.A.C. 7:15-7.2.

Administrative correction.

See: 29 N.J.R. 2826(a).

In (e), last sentence, substituted "Flow projections" for "Flow projects".

7:15-7.4 Development of basic TMDLs

(a) A basic TMDL model may be established for waterbody segments when insufficient data are available to develop a complex TMDL model and the complexity of the waterbody segment and the wasteload inputs to the waterbody segment do not justify development of a complex TMDL model. A basic TMDL model includes all TMDL models where a fully calibrated and verified water quality model has not been developed for the parameter(s) of concern. A basic TMDL model may consist of but is not limited to a mass balance for the waterbody segment for appropriate parameter(s) of interest.

(b) The following restrictions apply to the development of a basic TMDL model:

1. A basic TMDL model may be established for small tidal waterbody segments where there are no overlapping discharge effects and the Department determines that a tidally averaged dispersion term adequately describes the hydrological characteristics of the waterbody segment; and

2. A basic TMDL model (using only a mass balance) shall not be established for any pollutant or pollutant parameter which has a substantial direct effect on the dissolved oxygen dynamics of the stream.

(c) Basic TMDL models eligible to use and using mass balance equations shall assume that each pollutant or pollutant parameter is conservative. The maximum quantity of instream water available for effluent mixing in non-tidal waters is limited to the inflow entering the waterbody segment within the spatial boundaries of the TMDL. Where water is withdrawn from upstream of an effluent discharge point and subsequently reintroduced to the same waterbody segment at a downstream location (the discharge point) as effluent flow, the general mass balance equation shall be modified to account for the withdrawal of flow and associated pollutant loading.

7:15-7.5 Development of complex TMDLs

(a) Complex TMDL models shall be established when the Department determines that a basic TMDL model is not sufficient to adequately describe instream processes or where the Department approves an interested party's request to develop a complex TMDL under N.J.A.C. 7:15-7.2. Complex TMDL models include among other approaches calibrated and verified models which address the specific fate processes applicable to the parameter(s) of interest. Complex TMDL models may be developed using a steady state approach or a statistical approach such as continuous simulation, Monte Carlo, or lognormal modeling procedures.

(b) A complex TMDL model consists of a water quality model that may include, but is not limited to, the following:

1. Hydrological modeling of the waterbody segment(s) resulting in a calibrated and verified model of the waterbody segment. The hydrological model shall conform to the requirements in N.J.A.C. 7:14A-2.12 unless the Department determines that an alternative model is appropriate for a specific waterbody segment;

2. Development of a fate model for the pollutant(s) of interest that includes chemical, physical, and biological processes;

3. Modeling of point source and/or nonpoint source inputs which includes both concentration and quantity of pollutants that are or may be input from point sources and nonpoint sources. The point source and nonpoint source inputs shall include permitted discharges, unpermitted discharges, and discharges with in accordance with site remediation decisions; and

4. A series of model simulations reflecting a range of management options that will result in attainment of the ambient criteria and any adopted water quality goals for the waterbody segment.

7:15-7.6 Development of wasteload allocations and load allocations

(a) (Reserved)

(b) The assimilative capacity as defined by the TMDL shall be allocated to a reserve capacity, a margin of safety, wasteload allocation (WLAs) for point sources of pollutants, and load allocation (LAs) for nonpoint sources of pollutants. The total of the allocations to a reserve capacity, margin of safety, all WLAs, and all LAs shall not exceed the TMDL or assimilative capacity of the receiving waterbody segment.

(c) Assimilative capacity available in one waterbody segment identified under N.J.A.C. 7:15-6.2 shall not be reallocated to a different waterbody segment unless both waterbody segments are addressed by a single TMDL model. However, WLAs and LAs for conventional and non-conventional parameters (as defined in N.J.A.C. 7:14A-1) addressed by the TMDL may be traded within the waterbody segment (or segments, where multiple segments are addressed by a single TMDL model) so long as the WLAs and LAs ensure that the surface water quality standards will be attained as required by the provisions of N.J.A.C. 7:15-7.2.

(d) The following items shall be evaluated and addressed in developing the WLAs and LAs:

1. A reserve capacity and margin of safety in accordance with N.J.A.C. 7:15-7.7. These values shall be established on a case specific basis and may have a value of zero or some positive amount. The amount of the margin of safety and any reserve capacity and a description of the process for determining the margin of safety and any reserve capacity for the specific waterbody or waterbody segment or segments shall be specifically included in the TMDL;

2. LAs for individual or aggregate nonpoint source inputs:

- i. In the absence of sufficient ambient data to quantify nonpoint sources, a preliminary analysis of the potential impact of nonpoint source inputs on the receiving water may be completed. This analysis may consider potential effects due to land use patterns and/or the relative quantities of the particular pollutant that can be attributed to known point source inputs. As a result of this analysis the relative contribution believed to be due to nonpoint sources may be estimated. An allocation equal to this relative contribution may be allocated to the aggregated nonpoint source inputs for the particular pollutant. This allocation may be altered after collection of a sufficient quantity and quality of data to quantify nonpoint source contributions or the reductions in nonpoint source contributions caused by implementation of Best Management Practices; or

- ii. If sufficient data have been collected to enable the water quality model to include a reliable and quantitative consideration of nonpoint source contributions, the initial LAs may be based upon the anticipated nonpoint source loading after the imposition of controls based on Best Management Practices for which quantifiable load reductions can be reliably projected, and that are scheduled and expected to be in place within five years of the adoption of the TMDL or an alternative schedule adopted in the TMDL, with appropriate monitoring to ensure that the loading reductions have been achieved;