

Proposed Stream Flow Standards and Regulations

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The Regulations of Connecticut State Agencies are amended by adding sections 26-141b-1 to 26-141b-9, inclusive, as follows:

(NEW) **Section 26-141b-1. Short title.** Sections 26-141b-1 to 26-141b-9, inclusive, shall be known as the department’s Stream Flow Standards and Regulations.

(NEW) **Sec. 26-141b-2. Definitions.** As used in sections 26-141b-1 to 26-141b-9, inclusive, of the Regulations of Connecticut State Agencies:

- (1) “Anadromous” means a species of aquatic life that spawns in freshwater and migrates to salt water to complete its life cycle as an adult;
- (2) “Antecedent period” means the fourteen consecutive days immediately preceding the date the required release is calculated pursuant to section 26-141b-6(a)(3) of the Regulations of Connecticut State Agencies;
- (3) “Best management practices” means those practices, facilities or procedures which reduce the impact of human activity on natural stream flow patterns which the commissioner has determined to be acceptable based on technical, economic and institutional feasibility;
- (4) “Bioperiod” means the period during which certain biological processes dependent on stream flow rates occurs or is likely to occur;
- (5) “Bioperiod Q25” means the daily stream flow that is equaled or exceeded on 25 percent of days in a bioperiod calculated using methods developed by the U.S. Geological Survey or otherwise acceptable to the commissioner;
- (6) “Bioperiod Q50” means the daily stream flow that is equaled or exceeded on 50 percent of days in a bioperiod calculated using methods developed by the U.S. Geological Survey or otherwise acceptable to the commissioner;
- (7) “Bioperiod Q75” means the daily stream flow that is equaled or exceeded on 75 percent of days in a bioperiod calculated using methods developed by the U.S. Geological Survey or otherwise acceptable to the commissioner;
- (8) “Bioperiod Q80” means the daily stream flow that is equaled or exceeded on 80 percent of days in a bioperiod calculated using methods developed by the U.S. Geological Survey or otherwise acceptable to the commissioner;
- (9) “Bioperiod Q90” means the daily stream flow that is equaled or exceeded on 90 percent of days in a bioperiod calculated using methods developed by the U.S. Geological Survey or otherwise acceptable to the commissioner;

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- (10) “Bioperiod Q95” means the daily stream flow that is equaled or exceeded on 95 percent of days in a bioperiod calculated using methods developed by the U.S. Geological Survey or otherwise acceptable to the commissioner;
- (11) “Bioperiod Q99” means the daily stream flow that is equaled or exceeded on 99 percent of days in a bioperiod calculated using methods developed by the U.S. Geological Survey or otherwise acceptable to the commissioner;
- (12) “Cfsm” means cubic feet per second per square mile of contributing watershed area at a discrete point within a river or stream system and refers to the discharge rate of water;
- (13) “Classification map” means a map delineating the stream flow classification of river or stream segments within a specified geographic area;
- (14) “Clupeid spawning bioperiod” means that period from May 1 to May 31, inclusive, of each year;
- (15) “Commissioner” means the Commissioner of the Department of Environmental Protection or such commissioner’s designated agent or representative;
- (16) "Dam" means “dam” as defined in section 22a-409-1 of the Regulations of Connecticut State Agencies;
- (17) “Department” means the Department of Environmental Protection;
- (18) "Diversion" means “diversion” as defined in section 22a-367 of the Connecticut General Statutes;
- (19) "Divert" means “divert” as defined in section 22a-367 of the Connecticut General Statutes;
- (20) “Fluvial specialist” means a species of aquatic life that requires flowing water throughout its life cycle;
- (21) “Geomorphic” means those landforms resulting from geologic processes;
- (22) “Habitat forming bioperiod” means that period from March 1 to April 30, inclusive, of each year;
- (23) “Interbasin transfer” means “interbasin transfer” as defined in section 22a-367 of the Connecticut General Statutes;
- (24) “Median natural flow” means daily stream flow that is equaled or exceeded on fifty percent of days in a period of record calculated using methods developed by the U.S. Geological Survey or otherwise acceptable to the commissioner;

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- (25) “Other structure” means, without limitation, any pump, well, siphon, probe, channel, intake or any device that causes water to be diverted and by so diverting has an impact upon the flow of surface water, and that is not a dam;
- (26) “Overwinter bioperiod” means that period from December 1 to February 28 or February 29, inclusive, of each year;
- (27) “Person” means “person” and “municipality” as these terms are defined in section 22a-423 of the Connecticut General Statutes;
- (28) “Public water supply” means any surface or groundwater resource that provides water for a private, municipal or regional utility supplying water to fifteen or more service connections or to twenty-five or more persons;
- (29) “Q99” means the daily stream flow that is equaled or exceeded on 99 percent of days in a period of record calculated using methods developed by the U.S. Geological Survey or otherwise acceptable to the commissioner;
- (30) “Rearing and growth bioperiod” means that period from July 1 to October 31, inclusive, of each year;
- (31) “Registration” means a document filed by a person in accordance with section 22a-368(a) of the Connecticut General Statutes that establishes the location of a diversion of surface or groundwater from a river or stream system in existence prior to 1982, the amount of that diversion, and the use of water diverted at that location;
- (32) “Resident spawning bioperiod” means that period from June 1 to June 30, inclusive, of each year;
- (33) “River or stream segment” means a discrete, contiguous reach of river or stream channel for which a uniform classification has been adopted;
- (34) “River or stream system” means the water in the river or stream channel upstream of any point on that river or stream, including all tributary streams that drain into the channel, and the subsurface groundwater that contributes flow to sustain flow in the river or stream;
- (35) “Run-of-river” means a method of operating a dam on a continuous basis where no headpond storage is used and which results in a condition where outflow from the reservoir is equal to inflow on an instantaneous basis;
- (36) “Salmonid spawning bioperiod” means that period from November 1 to November 30, inclusive, of each year;

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- (37) “Stratified drift” means “stratified drift” as defined in section 22a-354h of the Connecticut General Statutes;
- (38) “Structure” means “other structure” as defined in this section of the Stream Flow Standards and Regulations;
- (39) “Water supply plan” means the plan required by section 25-32d-2 of the Regulations of Connecticut State Agencies; and
- (40) “Year” means the period starting January 1 and ending on December 31.

(NEW) Sec. 26-141b-3. Applicability.

- (a) The Stream Flow Standards and Regulations shall apply to all river or stream systems in this state.
- (b) Any person owning or operating a dam or other structure that impounds or diverts the waters of a river or stream system or that affects the flow of water in such a system shall comply with the Stream Flow Standards and Regulations starting on the applicable effective date as prescribed by section 26-141b-6 of the Regulations of Connecticut State Agencies. Prior to any applicable effective date prescribed in section 26-141b-6 of the Regulations of Connecticut State Agencies, the minimum stream flow standards established in sections 26-141a-1 to 26-141a-8, inclusive, of the Regulations of Connecticut State Agencies shall remain in effect.
- (c) Notwithstanding subsection (b) of this section, the following activities shall be exempt from the provisions of the Stream Flow Standards and Regulations:
 - (1) Hydroelectric power generation, provided such operation represents the principal purpose of the dam or other structure and operation is conducted in compliance with a current or renewed license issued by the Federal Energy Regulatory Commission;
 - (2) Temporary inspection, maintenance, repair or modification to a dam or other structure, provided all federal, state and local authorizations have been obtained and are complied with;
 - (3) Diversion of water for fire emergency purposes;
 - (4) Operation of a government-maintained flood control dam for the protection of property;
 - (5) Operation of a dam that is not constructed on a river, stream or brook, and collects and temporarily stores stormwater runoff during storm events;

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- (6) Diversion from a river or stream system at or below the point where that river or stream system is influenced by the tidal waters of Long Island Sound;
- (7) One or more wells joined in one system whose combined maximum withdrawal of water does not exceed fifty thousand gallons of water during any twenty-four-hour period;
- (8) The maximum withdrawal of fifty thousand gallons of surface water during any twenty-four-hour period;
- (9) Diversion of water incidental to testing the production capability of a well or the quality of water withdrawn therefrom, provided the diversion continues no longer than is necessary for testing the production capability of the well or the quality of water withdrawn therefrom;
- (10) Diversion of water authorized by the commissioner pursuant to 33 U.S.C. § 1326;
- (11) Diversion of water in a manner and degree that is specified by order of the commissioner for the abatement of pollution pursuant to sections 22a-133e, 22a-424, 22a-428, 22a-430, 22a-431, 22a-432, 22a-449 or 22a-451 of the Connecticut General Statutes, or as specified in approved plans submitted pursuant to such an order;
- (12) Diversion of water caused by drawing down the surface elevation of an impoundment and subsequent refilling for the purpose of aquatic weed control, water quality control, seasonal drawdown, or inspection or maintenance of a dam, gate house, outlet works, reservoir, shoreline or dock, provided:
 - (A) the surface elevation of the impoundment is lowered only to the elevation and for the amount of time necessary for aquatic weed control, water quality control, or inspection or maintenance of dam, gate house, outlet works, reservoir, shoreline or dock; and
 - (B) during drawdown and refilling periods, water is continuously released in an amount equal to or greater than 0.15 cfs or an amount equal to or greater than the natural inflow, whichever is less;
- (13) Diversion of surface waters by the Connecticut Department of Transportation incidental to highway construction authorized by the commissioner pursuant to sections 22a-32, 22a-39, 22a-342, 22a-361, 22a-403 or 25-68b to 25-68h, inclusive, of the Connecticut General Statutes;

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- (14) Diversion operated in compliance with a diversion permit issued by the commissioner pursuant to sections 22a-368 or 22a-378a of the Connecticut General Statutes;
- (15) Diversion subject to a flow management plan contained in a resolution, agreement or stipulated judgment to which the state, acting through the commissioner, is a party and effective as of October 1, 2005, or the management plan developed pursuant to section 3 of Public Act 00-152;
- (16) Diversion operated in compliance with a flow management compact approved by the commissioner pursuant to section 26-141b-7 of the Regulations of Connecticut State Agencies;
- (17) Operation of a dam designed and constructed for the primary purpose of providing temporary detention of stormwater during and immediately following a storm event;
- (18) Operation of a dam in run-of-river only if such dam complies with the recordkeeping and reporting requirements of section 26-141b-8 of the Regulations of Connecticut State Agencies;
- (19) Operation of a dam that impounds a river or stream system with an upstream drainage area of three square miles or less and that releases a minimum of 0.1 cfs of water; or
- (20) Operation of a dam that releases a minimum of 0.1 cfs of water to a river or stream system that flows for a distance of one mile or less before discharging into an impoundment, provided releases from the downstream dam, or the most downstream dam if in a series, meet the release requirements based upon total watershed size at the most downstream dam.

(NEW) Sec. 26-141b-4. Narrative standards.

- (a) A river or stream segment classified as “Class 1” pursuant to the Stream Flow Standards and Regulations shall, at all times:
 - (1) Provide the depth, volume and velocity of stream flow necessary to support and maintain habitat conditions supportive of an aquatic, biological community characteristic of that typically present in free-flowing river or stream systems of similar size and geomorphic characteristics under the prevailing climatic conditions; and

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- (2) Exhibit the natural variation of flows and water levels characteristic of systems that have not been altered by human activity.
- (b) A river or stream segment classified as “Class 2” pursuant to the Stream Flow Standards and Regulations shall, at all times:
 - (1) Provide the depth, volume and velocity of stream flow necessary to support and maintain habitat conditions supportive of an aquatic, biological community minimally altered from that typically present in free-flowing river or stream systems of similar size and geomorphic characteristics under the prevailing climatic conditions; and
 - (2) Exhibit near-natural variation of flows and water levels characteristic of systems that have been minimally altered by human activity.
- (c) A river or stream segment classified as “Class 3” pursuant to the Stream Flow Standards and Regulations shall, at all times:
 - (1) Provide the depth, volume and velocity of stream flow necessary to support and maintain habitat conditions supportive of an aquatic, biological community moderately altered from that typically present in free-flowing river or stream systems of similar size and geomorphic characteristics under the prevailing climatic conditions; and
 - (2) Exhibit sufficient variation of flows and water levels characteristic of systems that have been moderately altered by human activity.
- (d) A river or stream segment classified as “Class 4” pursuant to the Stream Flow Standards and Regulations may exhibit substantially altered stream flow conditions caused by human activity as necessary to provide for the legitimate needs and requirements of public health and safety, flood control, industry, public utilities, water supply, agriculture and other lawful uses.

(NEW) Sec. 26-141b-5. Adoption of river or stream system classifications.

- (a) The commissioner shall prepare a map of proposed classifications after considering the following factors:
 - (1) Size and location of permitted and registered diversions;
 - (2) Size and location of dams, reservoirs and other impoundments;
 - (3) Size and location of return flows of water;

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- (4) Existing land cover in the upstream watershed;
 - (5) Planned land use in the upstream watershed, as contained in a local or state plan;
 - (6) Available data related to the distribution and abundance of plant and animal species, such as wild brook trout (*Salvelinus fontinalis*), which are dependent upon stream and riparian habitat;
 - (7) Available data related to the presence of anadromous fish runs or where anadromous fish are actively being restored or are targeted for restoration;
 - (8) Existence of trout management areas and other recreational resources;
 - (9) The location of stream gages operated and maintained by the U.S. Geological Survey that have been identified by the commissioner in consultation with the U.S. Geological Survey as hydrologic index reference gages;
 - (10) Wild or scenic water designation by the state or federal government, or waters predominately within state forests, wildlife management areas, natural heritage areas or other large contiguous areas protected for conservation purposes, including protection for public water supply purposes;
 - (11) River or stream systems or segments thereof that have been identified as a potential source of water supply in a current water supply plan approved by the Department of Public Health;
 - (12) Practicality of, and potential for, restoring stream flow patterns to achieve consistency with Stream Flow Standards and Regulations due to the extent of prior channel modification or current high impact development and impervious land cover in the watershed; and
 - (13) Any other factor that the commissioner reasonably deems necessary.
- (b) Public participation. After development of a map of proposed classifications, the commissioner shall provide notice to the public of the proposed classifications of such river or stream segments and offer opportunity for public comment.
- (1) Notice of the proposed classifications and opportunity to comment shall be published in a newspaper with general circulation in the area within which the river or stream system is located, and on the department's web site.
 - (2) Notice shall also be provided to the following:

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- (A) The chief elected official in those municipalities within which the river or stream system is located;
 - (B) The executive director of the Council of Environmental Quality;
 - (C) The commissioners of the Department of Public Health, Department of Agriculture, and Department of Public Utility Control;
 - (D) The Secretary of the Office of Policy and Management;
 - (E) Persons, at any such person's last known address as filed with the department, holding registration or permits issued by the department authorizing activities that are known or suspected to alter the flow of water in the system for which classifications have been proposed; and
 - (F) Regional planning organizations, as defined in section 4-124i of the Connecticut General Statutes.
- (3) Procedure for submitting comments
- (A) The public shall have no fewer than 90 days from the date of newspaper publication of notice to submit comments on the proposed classification of any river or stream segment identified in such notice.
 - (B) An additional comment period of no fewer than 60 days shall be provided for the limited purpose of receiving comments within the scope of comments previously received pursuant to subparagraph (A) of this subdivision. Any additional comments shall be accompanied by a statement identifying the comment or comments submitted pursuant to subparagraph (A) of this subparagraph to which the additional comment is responding.
 - (C) To the extent practicable, all comments received by the commissioner shall be posted on the department's web site.
 - (D) The submission of additional comments exceeding the scope of comments received pursuant to subparagraph (A) of this subdivision will not be considered by the commissioner or posted on the department's website unless: (i) such comment is accompanied by a statement as to the comment's relevance and the reason the comment was not submitted earlier; and (ii) the commissioner finds that the comment is relevant and material and there was good cause for the failure to offer such comment earlier. If an additional comment exceeding the original scope of

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comments submitted pursuant to subparagraph (A) of this subdivision is accepted by the commissioner, the commissioner shall provide notice to the public on the department's website that the public shall have no fewer than fourteen days to respond to such additional comment.

- (4) Following the timely submission of public comments pursuant to subsection (b) of this section, the commissioner shall: (A) consider such comments and adopt classifications for the river or stream system or segment thereof as identified in the newspaper notice; and (B) prepare a document, to be published on the department's website, summarizing the principal reasons in support of the classifications, the principal considerations raised in opposition to the classifications and the reasons for rejecting or modifying a proposed classification.
 - (5) Notice of the adopted classification of any river or stream system or segment shall be published in the Connecticut Law Journal and such publication date shall be the effective date for purposes of implementing the Stream Flow Standards and Regulations for such river or stream system or segment.
- (c) Petition to change classification. The commissioner may consider from any person a written petition to change the classification of a river or stream system or segment thereof or review whether current classifications continue to be appropriate and, if not, propose any classification changes as necessary.
- (1) Demonstration of need for classification change
 - (A) Any petition to change the classification of a river or stream system or segment thereof from a more altered to a less altered classification shall include a demonstration that:
 - (i) one or more of those factors identified in subsection (a) of this section as having relevance with respect to the original classification of that river or stream system have changed or were mischaracterized at the time of the original classification by the commissioner; and
 - (ii) the river or stream system currently exhibits a pattern of flow that is consistent with the narrative stream flow standard for the proposed classification.

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- (B) Any petition to change the classification of a river or stream system or segment thereof from a less altered to a more altered classification shall include a demonstration that:
- (i) such change is necessary to accommodate the legitimate needs and requirements of public health and safety, flood control, industry, public utilities, water supply, agriculture, or other lawful uses and that those needs and requirements cannot be satisfied while maintaining consistency with the narrative stream flow standard for the current classification;
 - (ii) one or more of those factors identified in subsection (a) of this section as having relevance with respect to the original classification of that river or stream system have changed or were mischaracterized at the time of the original classification by the commissioner;
 - (iii) alteration of the stream flow pattern has been and will continue to be minimized to the extent practicable through the application of all reasonably feasible best management practices, including but not limited to conservation practices and water reuse; and
 - (iv) alternative sources of water, including interbasin transfers and development of new sources currently not utilized, have been and will continue to be utilized to the maximum extent practicable.
- (C) For a river or stream system currently exhibiting a stream flow pattern consistent with the stream flow standard for its current classification, the petition shall, in addition to those items enumerated in subparagraphs (A) or (B) of section 22a-141b-5(c) of the Regulations of Connecticut State Agencies, as applicable, include a copy of the completed application for each new or expanded activity proposed in the river or stream system for which a diversion permit is required under Chapter 446i of the Connecticut General Statutes if the proposed change in classification is required to accommodate such activities.
- (D) For river or stream system or segment thereof for which a change in classification to Class 4 is sought, the petition shall, in addition to those items enumerated in subparagraph (B) of section 22a-141b-5(c) of the Regulations of Connecticut State Agencies, include a demonstration that there is overriding social or economic justification for changing the

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classification of the river or stream system or segment, including identification of the following:

- (i) the specific social needs of the municipality or municipalities within which the river or stream system is located that would not be met should the change in classification not be approved and which can not otherwise be satisfied; and
- (ii) the specific economic impacts likely to substantially impair or otherwise detrimentally affect the economy of the community or the state that would occur should the change in classification not be approved.

(2) Commissioner action on petitions

- (A) The commissioner shall deem incomplete and reject for insufficiency any petition that does not include a prima facie demonstration as required by subdivision (1) of section 22a-141b-5(c) of the Regulations of Connecticut State Agencies.
- (B) The commissioner shall substantively review any petition that includes a prima facie demonstration as required by subdivision (1) of section 22a-141b-5(c) of the Regulations of Connecticut State Agencies. The commissioner shall thereafter reject the proposed classification or modify the existing classification.
- (C) Notwithstanding section 26-141b-5(c)(2)(B) of the Regulations of Connecticut State Agencies, the commissioner may reject without prejudice any petition submitted less than three years after the last effective date of classification for a river or stream system or segment thereof.
- (D) Petitions to change classifications shall be subject to the requirements of subsection (b) of this section, except that the person submitting a petition shall publish notice of any proposed classification and of the opportunity to comment on such proposal in a newspaper of general circulation in the area of the river or stream system that will be affected by any classification change.

(NEW) Sec. 26-141b-6. Presumptive standards.

- (a) Dam owners or operators shall comply with the following:

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- (1) Not later than six months after a river or stream segment’s effective date of classification as Class 1, all dams shall be operated in run-of-river operation.
- (2) Not later than five years after the first effective date of classification for a river or stream segment, a dam shall be operated:
 - (A) To release seventy-five percent of such system’s natural inflow if the release is into a river or stream segment designated as Class 2.
 - (B) To release the following minimum flow during each bioperiod if the release is into a river or stream segment designated as Class 3:

Bioperiod	Effective Dates	Minimum Required Release
Overwinter	Dec 1- Feb 28/29	Bioperiod Q95
Habitat Forming	Mar 1 – Apr 30	Bioperiod Q95
Clupeid Spawning	May 1 – May 31	Bioperiod Q95
Resident Spawning	June 1 – June 30	Bioperiod Q90
Rearing and Growth	July 1- Oct 31	Bioperiod Q80
Salmonid Spawning	Nov 1 – Nov 30	Bioperiod Q90

- (C) To release the greater of 0.1 cfsm or the minimum stream flow required pursuant to sections 26-141a-1 to 26-141a-8, inclusive, of the Regulations of Connecticut State Agencies if the release is into a river or stream segment designated as Class 4.

- (3) Not later than ten years after the first effective date of classification for a river or stream segment, a dam shall be operated:
 - (A) To release the following minimum continuous flow if the release is into a river or stream segment designated as Class 3 and except as allowed pursuant to subdivision (4) of subsection (a):

Bioperiod	Effective Dates	Minimum Required Release	
		Antecedent Period Dry	Antecedent Period Wet
Overwinter	Dec 1- Feb 28/29	Bioperiod Q95	Bioperiod Q75
Habitat Forming	Mar 1 – Apr 30	Bioperiod Q95	Bioperiod Q75
Clupeid Spawning	May 1 – May 31	Bioperiod Q95	Bioperiod Q75
Resident Spawning	June 1 – June 30	Bioperiod Q90	Bioperiod Q75
Rearing and Growth	July 1- Oct 31	Bioperiod Q80	Bioperiod Q50
Salmonid Spawning	Nov 1 – Nov 30	Bioperiod Q90	Bioperiod Q75

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- (i) The required release shall be calculated and the release rate adjusted, if necessary, on the first day and the fifteenth day of every month unless such day falls on a weekend or holiday in which case the required release shall be calculated and the release rate adjusted on the next business day.
 - (ii) The wet period release is required when the median natural flow during the antecedent period equals or exceeds the bioperiod Q25.
 - (iii) The dry period release is required when the median natural flow during the antecedent period is less than the bioperiod Q25.
- (B) To release the greater of 0.1 cfs or the minimum stream flow required pursuant to sections 26-141a-1 to 26-141a-8, inclusive, of the Regulations of Connecticut State Agencies if the release is into a river or stream segment designated as Class 4.
- (4) Dam owners subject to section 25-32d of the Connecticut General Statutes and regulations adopted thereunder may, not later than five years after the first effective date of classification for a river or stream segment, reduce the minimum release required pursuant to subdivisions (2) and (3) of subsection (a) during certain drought phases. These drought phases, as defined in the dam owner's water supply plan, shall trigger the following reduced releases:

Water Supply Plan Trigger	Percentage of Required Dry Release	
	Rearing & Growth Bioperiod	All Other Bioperiods
Drought Advisory	100%	75%
Drought Watch	50%	50%
Drought Warning	25%	25%
Drought Emergency	No Release Required	No Release Required

- (5) For the purposes of subsection (a) of this section, release includes dam leakage, spillage return flow, and discharge from outlet works.
- (b) Owners or operators of other structures shall comply with the following:
- (1) Not later than five years after the first effective date of classification for a river or stream segment, each structure that causes an impact to such segment, regardless of the effect that dams and other structures may have on such segment, shall:

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- (A) If the structure impacts a Class 1 segment, limit on any day the maximum alteration of stream flow to an amount less than or equal to 0.05 multiplied by the naturally occurring, annual Q99. For illustrative purposes:

$$\begin{array}{l} \text{Each structure's} \\ \text{maximum alteration} \end{array} \leq (0.05)(Q99_{\text{annual}})$$

- (B) If the structure impacts a Class 2 segment, limit on any day the maximum alteration of stream flow to an amount less than or equal to 0.25 times the naturally occurring, annual Q99 multiplied by the ratio of the naturally occurring Q99 for the current bioperiod to the naturally occurring Q99 for the rearing and growth bioperiod. For illustrative purposes:

$$\begin{array}{l} \text{Each structure's} \\ \text{maximum alteration} \end{array} \leq [(0.25)(Q99_{\text{annual}})] \times \frac{Q99_{\text{current bioperiod}}}{Q99_{\text{rearing \& growth bioperiod}}}$$

- (C) If the structure impacts a Class 3 segment, limit on any day the maximum alteration of stream flow to an amount less than or equal to 0.50 times the naturally occurring, annual Q99 multiplied by the ratio of the naturally occurring Q99 for the current bioperiod to the naturally occurring Q99 for the rearing and growth bioperiod. For illustrative purposes:

$$\begin{array}{l} \text{Each structure's} \\ \text{maximum alteration} \end{array} \leq [(0.50)(Q99_{\text{annual}})] \times \frac{Q99_{\text{current bioperiod}}}{Q99_{\text{rearing \& growth bioperiod}}}$$

- (2) Not later than ten years after the first effective date of classification for a river or stream segment, each structure that causes an impact to such segment, with due regard to the effect that dams and other structures may have on such segment, shall:

- (A) If the structure impacts a Class 1 segment, maintain and operate in such a way as to limit on any day the collective, maximum alteration of stream flow to an amount less than or equal to 0.05 multiplied by the naturally occurring, annual Q99. For illustrative purposes:

$$\begin{array}{l} \text{Collective, maximum} \\ \text{alteration in the river} \\ \text{or stream system} \end{array} \leq (0.05)(Q99_{\text{annual}})$$

- (B) If the structure impacts a Class 2 segment, use best efforts to maintain and operate in such a way as to limit on any day the collective, maximum alteration of stream flow to an amount less than or equal to 0.25 times the naturally occurring, annual Q99 multiplied by the ratio of the naturally

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occurring Q99 for the current bioperiod to the naturally occurring Q99 for the rearing and growth bioperiod. For illustrative purposes:

$$\begin{array}{l} \text{Collective, maximum} \\ \text{alteration in the river} \\ \text{or stream system} \end{array} \leq [(0.25)(Q99_{\text{annual}})] \times \frac{Q99_{\text{current bioperiod}}}{Q99_{\text{rearing \& growth bioperiod}}}$$

- (C) If the structure impacts a Class 3 segment, use best efforts to maintain and operate in such a way as to limit on any day the collective, maximum alteration of stream flow to an amount less than or equal to 0.50 times the naturally occurring, annual Q99 multiplied by the ratio of the naturally occurring Q99 for the current bioperiod to the naturally occurring Q99 for the rearing and growth bioperiod. For illustrative purposes:

$$\begin{array}{l} \text{Collective, maximum} \\ \text{alteration in the river} \\ \text{or stream system} \end{array} \leq [(0.50)(Q99_{\text{annual}})] \times \frac{Q99_{\text{current bioperiod}}}{Q99_{\text{rearing \& growth bioperiod}}}$$

- (3) For a structure impacting stream flow in a Class 4 river or stream segment at the time of such classification, continue to operate unaffected by the Stream Flow Standards and Regulations, provided any such structure complies with all other applicable law.
- (4) For a structure diverting water from a reservoir, not be required to operate pursuant to the requirements of subsection (b) of this section, provided that the requirements of subsection (a) of this section are met at the dam forming the reservoir.

(c) **Variances**

- (1) The commissioner may issue a variance to reduce the minimum release required pursuant to subsection (a) of this section, or to increase the maximum alteration required pursuant to subsection (b) of this section if requested by either:
- (A) The commissioner of any state agency or the Governor; or
- (B) The owner or operator of a dam or other structure.
- (2) A request for a variance under this subsection shall contain information sufficient to allow the commissioner to give adequate consideration to the effect of the operation of the dam or other structure under such a variance on the river or stream system in question. The commissioner may require additional information prior to acting on such a request. If the requested variance is for a period longer than 90 days, the requester shall, at the same time a request is submitted to the

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commissioner and in a form as prescribed by the commissioner, publish notice of the request in a newspaper of general circulation in the area of the river or stream system that will be affected by the variance.

- (3) In determining whether to grant the requested variance under this section, the commissioner shall evaluate consistency of the proposed variance with the appropriate narrative standard for the river or stream system in accordance with section 26-141b-4 of the Regulations of Connecticut State Agencies. The commissioner may also consider the following factors:
- (A) Runoff or rainfall statistics for the period in question as compared with average runoff or rainfall over preceding years;
 - (B) Impoundment levels or volume of diversion as compared with levels or volumes at the same season in previous years;
 - (C) Peculiar or unusual demand situations or requirements to protect water quality;
 - (D) Peculiar or unusual water capture problems;
 - (E) Unusual health, safety, power, or other crises imposing increased demands on water supplies; and
 - (F) If notice was published by the requester, any comments received in response to such notice.
- (4) The commissioner may issue the requested variance in whole or part, on an individual, basin-wide or state-wide basis, and may include any condition, such as time limitations, deemed necessary.
- (d) Notwithstanding subsections (a) and (b) of this section, and after the first effective date of classification for a river or stream system, the release requirements for any classification change made to such system resulting from a petition, the commissioner's initiative or a flow management compact adopted pursuant to section 26-141b-7 of the Regulations of Connecticut State Agencies shall be effective immediately.
- (e) After the first effective date of classification for a river or stream segment, the department, in issuing a permit pursuant to section 22a-368(b) of the Connecticut General Statutes to authorize the diversion of surface or groundwater from such system, or in renewing or modifying such a permit, shall consider and apply the Stream Flow Standards and Regulations to the maximum extent practicable.

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(NEW) Sec. 26-141b-7. Flow management compacts.

- (a) Any person may, at any time after a river or stream system's effective date of classification, develop and propose for the commissioner's approval a flow management compact with alternative standards differing from the presumptive standards required pursuant to section 26-141b-6 of the Regulations of Connecticut State Agencies.
- (b) A flow management compact must demonstrate that when fully implemented:
 - (1) It will meet the narrative standards;
 - (2) It will impose sufficient restrictions on all dams and other structures subject to the Stream Flow Standards and Regulations and that are within the compact's geographic area defined in terms of a river or stream system or segments;
 - (3) It will implement best management practices, including but not limited to conservation practices and water reuse, in order to minimize alteration of the natural flow pattern; and
 - (4) It will develop monitoring and reporting requirements, in order to verify that all dams and other structures governed by the compact are in compliance with its terms and conditions.
- (c) A proposal for a flow management compact shall include the following information:
 - (1) The geographic area of the compact;
 - (2) The river or stream system or segments and their classifications;
 - (3) A list of persons covered under the compact;
 - (4) Authorized or permitted diversions of all persons within the geographic area of the compact;
 - (5) Current maximum withdrawal or minimum dam releases of persons covered under the compact;
 - (6) Alternative water allocations and operational restrictions necessary to meet the Stream Flow Standards and Regulations;
 - (7) Supporting documentation demonstrating that any proposed alternatives to the presumptive standards will be sufficient to meet the narrative standards for each classified river or stream segment within the compact, including the following:

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- (A) Information submitted by persons owning or operating dams or other structures within the river or stream system, including any planned improvements that, once implemented, can reasonably be expected to achieve consistency with the compact;
- (B) Results of any biological or habitat studies performed within the river or stream system or in comparable systems demonstrating the effect of stream flow characteristics on natural aquatic habitat and the composition of the aquatic biological community; and
- (C) Results of any modeling or other scientific investigations or readily available, credible information that the commissioner deems relevant to estimating the collective impact of dams and other structures that impound or divert the flow of water, including those dams and other structures that are located in the river or stream system upstream from those river or stream segments where the commissioner finds that stream flow patterns are not consistent with narrative or presumptive stream flow standards. The proposal for a flow management compact shall provide the following additional information:
 - (i) the geographic locations of dams and other structures that impound or divert the flow of water;
 - (ii) the separation distance between any groundwater extraction wells and the river or stream channel;
 - (iii) the sub-surface geology, particularly the presence or absence of stratified drift deposits or other geological features that may influence the movement of water between surface and groundwater contributing to the flow pattern;
 - (iv) any enforceable restrictions or conditions placed upon the extraction of water contained in any registration, permit or other written agreement that may serve to mitigate the impact of the extraction on flow in the river or stream system;
 - (v) development density and the degree to which best management practices have been applied to minimize the impact of impervious surfaces on the natural stream flow pattern;

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- (vi) return flow of water or treated wastewater that alter stream flow patterns in the river or stream system; and
 - (vii) a natural stream flow pattern to be equivalent to the pattern described by a synthetic hydrograph of daily stream flow values derived using methods developed by the U.S. Geological Survey or otherwise acceptable to the commissioner for the purpose of calculating the naturally occurring annual and bioperiod stream flow statistics necessary to evaluate consistency with these stream flow standards;
- (8) An implementation schedule; and
- (9) Any other information deemed necessary by the commissioner.
- (d) The commissioner shall not approve a proposed flow management compact unless it considers to the maximum extent practicable the legitimate needs and requirements of public health and safety, flood control, industry, public utilities, water supply, agriculture and other lawful uses.
- (e) The commissioner may, at any time during the implementation of an effective compact, modify or terminate a compact if the implementation of such compact does not meet narrative standards. A stream flow management compact approved by the commissioner shall be effective for up to twenty years, after which period such compact may be reapproved.
- (f) Prior to the re-approval of a compact or the commissioner's intent to approve, modify or terminate a compact, the procedure for public notice and opportunity for public comment pursuant to section 26-141b-5(b) of the Regulations of Connecticut State Agencies shall apply, except that the person seeking commissioner action on a compact shall be responsible for publishing notice in a newspaper of general circulation in the area of the river or stream system that will be affected by the compact.

(NEW) Sec. 26-141b-8. Record keeping and reporting requirements.

- (a) Any person owning or operating a dam or other structure subject to the Stream Flow Standards and Regulations shall, not later than one year after the effective date of classification for a river or stream segment on which such owner's dam or other structure is located, submit to the department on a form prescribed by the commissioner the following information:
 - (1) The name of the dam or other structure;

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- (2) The permit or registration number assigned to the dam or other structure pursuant to section 22a-368 of the Connecticut General Statutes;
 - (3) The geographical location of the dam or other structure in latitude and longitude (degrees, minutes, seconds);
 - (4) The affected river or stream system or segment thereof and their classifications;
 - (5) The name, address and telephone number of the owner or operator of the dam or other structure;
 - (6) A certification that the owner or operator will continue to meet sections 26-141a-1 to 26-141a-8, inclusive, of the Regulations of Connecticut State Agencies, if applicable; and
 - (7) A statement that the owner or operator has a plan for making those necessary infrastructure changes necessary to comply with the five-year timeframe established in subdivision (2) of subsections (a) and (b) of section 26-141b-6, if such timeframe is applicable.
- (b) Any person owning or operating a dam in run-of-river operation shall, not later than one year after the effective date of classification of the river or stream segment on which such owner's or operator's dam is located, submit to the department a certification that such dam is operating and will continue to operate in run-of-river mode.
- (c) Any person subject to the Stream Flow Standards and Regulations shall, not later than five years after the effective date of classification of the river or stream segment on which such owner's or operator's dam or other structure is located, maintain the following information:
- (1) The daily amount of water diverted for each day of operation and, for a dam only, the daily amount of water released from the dam during the previous calendar year; and
 - (2) The daily amount of water returned to the river or stream system and the geographical location in latitude and longitude of said return.
- (d) All operating records shall be maintained for a minimum of fifteen years and such records shall be submitted to the commissioner not later than thirty days following a written request for such records. Upon notification by the department that an electronic reporting system is available for use, operators and owners shall commence the annual submittal of data electronically as prescribed by the commissioner.

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(NEW) Sec. 26-141b-9. Conflict and severance.

- (a) Where there is a conflict between the provisions of the Stream Flow Standards and Regulations and those of any other applicable ordinance, regulation or permit, the provisions of the ordinance, regulation or permit that imposes the most stringent requirements shall govern.
- (b) The invalidity of any word, clause, sentence, section, part or provision of the Stream Flow Standards and Regulations shall not affect the validity of any other part that can be given effect without such invalid part or parts.

Statement of Purpose:

The purpose of the proposed regulations is to provide for the protection of Connecticut's river and stream systems by establishing stream flow standards that apply to (or exempt by regulation) all river and stream systems in the state. These proposed rules eventually replace the existing requirements found in the Minimum Stream Flow Standards and Regulations of the Connecticut Department of Environmental Protection, sections 26-141a-1 to 26-141a-8, inclusive, of the Regulations of Connecticut State Agencies.

The proposed regulations balance the needs of humans to use water for drinking and domestic purposes, fire and public safety, irrigation, manufacturing, and recreation, with the needs of fish, wildlife and other biota that also rely upon the availability of water to sustain healthy, natural communities. The regulations provide a framework considering the best available science to balance the human and ecological needs for water both through classification and operational rules, provide for public notice and input into the process, and provide a phased implementation of regulatory requirements to encourage and support water planning and conservation efforts. Finally, these rules protect Connecticut's river and stream systems by promoting better, more efficient management of our water supplies, so that all needs, both human and ecological, can be met both today and in the future.

The proposed regulations include the following provisions:

- (1) Section 26-141b-1 – Short title for the proposed regulations;
- (2) Section 26-141b-2 – Definitions. These include terms such as “bioperiod,” “river or stream segment,” “river or stream system,” “run-of-river,” and “structure”;
- (3) Section 26-141b-3 – Applicability and exemptions. There are exemptions for safety, such as fire or drought emergencies and dam inspections; limited or short term water use, such as withdrawals less than 50,000 gallons per day, temporary stormwater detention

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- and well capacity testing; permitted withdrawals; and other activities such as pollution abatement;
- (4) Section 26-141b-4 – Narrative standards. This section establishes stream flow classifications and the narrative goals for those stream classes, based on the natural variation of stream flows, and on the existing and planned degree of human alteration to the streams. The proposed stream flow standards incorporate the concept of balancing human and ecological needs for water by establishing different flow standards for each of four categories or classes of waters. In Class 1 waters, priority is given to protecting ecological health. In Class 4 waters, support of human activities is weighted most heavily. Class 2 and Class 3 waters have intermediate balance points between ecological and human uses. The flow standards for each class are based on maintaining, to various degrees, the natural variation in flow expected in Connecticut given seasonal climate and rainfall patterns;
- (5) Section 26-141b-5 – Adoption of river or stream system classifications. This section sets out the adoption process for stream flow classifications, including the physical, natural and human factors for classification, the public participation process, and the petition process for changes. The factors the commissioner will consider when determining a classification for a river or stream segment include, but are not limited to, the following: size and location of surface and groundwater withdrawals; size and location of planned future withdrawals, including potential sources for public water supply; size and location of dams and impoundments; size and location of water and wastewater discharges; existing and proposed development; presence of flow-sensitive aquatic life; anadromous fish runs, trout management areas, and other recreational resources; location of US Geological Survey natural reference stream gages; designated open space protected areas; and physical habitat restoration potential. A map of the proposed classifications will be publicly noticed and ample opportunity for public comment is incorporated into the requirements. The commissioner will take such comments into consideration before finalizing the classifications, which will then be published. A petition process to request changes to the classification (to either a more altered or less altered class) is included, along with factors for consideration and public comment;
- (6) Section 26-141b-6 – Presumptive standards. This section sets out presumptive, numeric flow standards for each class based on seasonable flow criteria and type of flow altering activity. This includes specific release requirements for dams to maintain a minimum stream flow, maximum stream flow alteration standards for other structures such as wells or pumps to limit the water withdrawn from the stream, implementation timeframes, and drought relief and variance provisions;

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- (7) Section 26-141b-7 – Flow management compacts. This section establishes rules and procedures for developing flow management compacts among the water users in a river or stream system for the commissioner’s approval that identify alternative flow standards from the presumptive, numeric standards, but which still meet the narrative standards for the river or stream system. Goals, information requirements and supporting documentation are required for such a compact;

- (8) Section 26-141b-8 – Record keeping and reporting requirements. This section sets out requirements to submit to the department basic information on the dam or other structure, such as name of owner and location, within one year of adoption of the regulations. Beginning five years after adoption, data on the daily amount of water diverted and any amounts returned to the river or stream system should be maintained and, upon a request, submitted to the commissioner; and

- (9) Section 26-141b-9 – Conflict and severance. A conflict and severance section is included in case of conflicting legal requirements.