

STREAM FLOW CLASSIFICATIONS & STATEMENT OF REASONS Connecticut River Basin

INTRODUCTION

On March 1, 2017, the Commissioner of the Connecticut Department of Energy & Environmental Protection (the “Commissioner”) published a notice of proposed stream flow classifications for the Connecticut River Basin (see Appendix I). Notice was provided in accordance with the Regulations of Connecticut State Agencies (RCSA) Section 26-141b-5 in newspapers in the basins, including the Bristol Press, Hartford Courant, Journal Inquirer, Middletown Press, New Britain Herald, New Haven Register, New London Day, Norwich Bulletin and Torrington Register Citizen. The notice was also mailed and emailed to the required parties listed in RCSA Section 26-141b-5 and to other interested parties (see Appendix II), and published on the Department’s website. Mapping of the proposed classifications was made available in several formats, including an interactive on-line map (<http://ctdeep.maps.arcgis.com/apps/SimpleViewer/index.html?appid=195029977b52422c9b15c1107d38d84e>). The interactive map allowed an individual to view the factors considered in the classification of each stream segment. Two public information sessions were held, as detailed in the public notice.

Public comments and information for the Commissioner’s consideration on the proposed classifications were solicited through the public notice. In accordance with the regulations, comments were solicited pertaining, but not limited to: (i) the factors for consideration in the regulations; (ii) the impact of the proposed classification on any prior investment made to develop a permitted or registered diversion and the alternatives, if any, to the diversion including cost factors and feasibility of such alternatives; (iii) the relationship of an existing or proposed diversion to economic development or jobs; and (iv) the practicality of, and potential for, achieving ecological benefit from restoring stream flow to the specific river or stream system. Comments were accepted by email and hard copy, and a total of six comment letters were received. The list of individuals and organizations who submitted comment letters on the proposed regulations is included as Appendix III.

This report summarizes the principal reasons in support of the classifications, the principal considerations raised in opposition to the classifications and the reasons for rejecting or modifying specific proposed classifications.

ADMINISTRATIVE REQUIREMENTS

RCSA Sec. 26-141b-5 requires a minimum 90 day public notice period for public comment on

proposed classifications. The Commissioner, in consultation with the Commissioner of Public Health and with technical assistance from the Office of Policy and Management, Department of Economic and Community Development, and the Department of Agriculture: (1) considered such comments and adopted classifications for the river or stream segment thereof as identified in the public notice; and (2) prepared a document 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. Notice of the adopted classifications shall be published in the Connecticut Law Journal upon issuance of this report.

BACKGROUND

The Connecticut Stream Flow Standards and Regulations, RCSA Sections 26-141b-1 to 26-141b-8, inclusive, became effective December 12, 2011. The regulations apply to all rivers and streams in the state. They establish stream flow standards that preserve and protect aquatic life, fish, and wildlife dependent on flow; promote public recreation; are based to the maximum extent practicable on natural variations of flow while meeting societal needs; and are based on the best available science.

The regulations require two separate but related activities: First, they require that all rivers and streams be classified into stream flow classes. Each stream flow class represents a balancing of human use and ecological conditions appropriate to the respective class. The regulations establish the public process for classifying streams and identify the human use and ecological considerations for determining the classification appropriate to specific waters. Second, they require owners or operators of dams that control stream flow to comply with release rules that apply to a stream once it has been classified. The releases are required to begin no later than ten years from classification to allow current users time to adjust their operations to comply with the new regulations without unduly disrupting the supply of water available for human use.

In accordance with the RCSA Sec. 26-141b-5, the Commissioner, after consultation with the Commissioner of Public Health, prepared mapping of proposed classifications indicative of the degree of human alteration of natural stream flow and the extent to which the ecological system is supported for the streams in the Connecticut River Basin. The proposed stream flow classification of a stream or river segment was based on ecological conditions and human use characteristics. These included factors such as location, size and use of dams; existing registered or permitted withdrawals; existing and potential use of the water for public water supply; land use and land cover within the watershed; habitat indicators and other conditions. The complete list of factors and considerations in the regulations can be found in Appendix IV.

The Commissioner utilized the best available data sources related to the factors and the state's Geographic Information System (GIS) for the analyses and to propose the initial stream flow classifications. The methodology for establishing the proposed classifications is attached as Appendix V. This methodology was developed in conjunction with the Science & Technical Work Group formed during development of the regulations and was well received by water professionals in demonstrations and presentations. The methodology continues to evolve as additional basins are classified.

The Department shared and solicited comment on the proposed initial classifications from the Connecticut Department of Public Health (DPH) in February, 2017. DPH provided comment and information on potential future public water supplies, which was then incorporated into the proposed classifications to the extent possible prior to issuance of the public notice. The Department also solicited information on future potential sources with significant investment from each of the large water companies in the basin in August, 2016. These water companies included Aquarion Water Company, Avon Water Company, Berlin Water Control Commission, Bristol Water Department, Colchester Water Department, Cromwell Fire District, Connecticut Water Company, Hazardville Water Company, Manchester Water Department, the Metropolitan District Commission, Middletown Water Department, New Britain Water Department, New Hartford Water Department, Portland Water Department, Salmon Brook Water District, Tariffville Fire District, Torrington Water Company, Valley Water Systems, Watertown Fire District and Winsted Water Works.

The Department recognizes that while it used the best available data for the proposed initial classifications, additional data could be available at the local level. The public notice and comment period allowed the public to provide additional or more accurate segment-specific data so that the proposed classifications could be modified as appropriate in accordance with the factors for consideration.

CONSIDERATION OF PUBLIC COMMENT

Comment letters were received from six entities (see Appendix III). The full comment letters, as submitted, can be obtained online at www.ct.gov/deep/streamflow. In general, the comments were focused on providing additional data on specific stream segments for consideration in the classification of that segment. All the segment-specific data provided were evaluated and factored into the proposed classification for that segment where appropriate. Specific responses on individual segments are provided in Appendix VI. More general comments are discussed below. These comments are paraphrased for brevity; however, every effort has been made to preserve the original intent of the comment. Comments focused on similar issues and common themes are grouped together. The comment letter numbers from Appendix III are listed in parentheses at the end of each comment to identify the commenter.

PRINCIPAL REASONS IN SUPPORT

Several comment letters indicated that, with minor exceptions, the factors for consideration were well-represented by the classifications of the segments (Letters #1, 3a and 3b).

PRINCIPAL CONCERNS OR CONSIDERATIONS RAISED IN OPPOSITION

As mentioned above, a number of commenters provided new or revised data for consideration on specific stream segments, which are detailed in Appendix VI (Letters #1 – 7). The more general concerns are discussed below.

1. Comment: Concern was expressed that small public water supply wells are not accounted for

as diversions in the classification methodology, resulting in improper classification of those segments (Letter #1).

Response: These are wells that are below the threshold for obtaining a diversion permit (pumping less than 50,000 gallons per day), and typically drilled into bedrock. The premise for not requiring a diversion permit for such wells is that the pumping rate is low enough that it has minimal impact on the stream and other environmental resources in the vicinity. Since such pumping is presumed not to affect stream flow, there is no need to add these in as a consideration for stream flow. However, where there is a high concentration of such wells, or where the estimated source area for an individual well intersects the stream, it was added into the classification considerations. Please see the responses on specific segments in Appendix VI.

2. Comment: Concern was expressed about potential future implications of stream segments which extend into public water supply reservoirs, are completely beneath public water supply reservoirs or overlay dam outlet works (Letter #5).

Response: The Department recognizes that these segments are not subject to the Stream Flow Regulations. As discussed in numerous forums through the development of the Stream Flow Regulations and Classifications, the process to generate draft classifications is necessarily automated to the extent possible utilizing data available state-wide in GIS format. These are an artifact of the automated process. Where segments which underlay reservoirs and dam outlet works are identified, they are removed as segments (Appendix VI). In any case, stream flow releases are only required from dams, so classification of a segment underlying the reservoir behind the dam or overlying the dam does not result in additional required stream flow releases.

3. Comment: There was concern that the Department did not initially propose any Class 4 designations, stating that the regulations specifically require "...affirmative consideration of the factors pertinent to that segment in the context of four, not three, possible categories of classification". Segments that score in the range of 9 to 12 in the classification methodology "...would be "substantially altered" and thus a Class 4". The necessity to "...demonstrate "an overriding societal need or economic need that necessitates change the classification," is "an unintended and unduly onerous burden where all four classifications were not considered in the initial classification process". The "automatic Class 3" designations should be re-considered for Class 4 designations. (Letter #5)

Response: The methodology utilized is consistent with the regulations. As mentioned previously, generating the draft classifications is largely driven by metrics derived using available statewide hydrologic, ecologic and human use data. Class 4 designations require more site-specificity than can be obtained from the initial classification process and available statewide data. The societal needs, economic costs, and environmental impacts to be considered as described in RSCA Sec. 26-141b-4 (d) requires consideration of:

- (1) Extent of prior channel modification;
- (2) Current impact of development and impervious cover in the watershed;
- (3) Overriding societal needs that cannot otherwise be met;
- (4) Economic impact that would substantially impair or otherwise detrimentally affect the economy of the community in which the segment is located or of the state;
- (5) Associated environmental impacts to other river or stream segments;
- (6) Existing biological community; and
- (7) The margin of safety of the community water system utilizing the river or stream segment as an existing public water supply source.

While not readily available on a state-wide basis, we anticipated comment on these factors to be provided during the public comment period by the entities that have this data. The Department carefully considers all information submitted during the comment period, including any data pertinent to a Class 4 designation, without invoking a petition process. Such data has been provided for specific segments during this and previous basin classification processes, and where appropriate, Class 4 designations have been made.

4. Comment: Concern was expressed that the “Automatic Class 3 designation” is not contemplated by the regulations. (Letter #5)

Response: It is important to distinguish between the draft stream flow classifications which are noticed for public comment and the solicitation of additional information, and the final stream flow classifications which carry regulatory weight. An “Automatic Class 3” designation is a label utilized in the process of drafting the stream flow classifications so that the group of stream segments that cannot be classified as Class 1 or Class 2 segments can be distinguished from those segments that are initially classified as Class 3 due to their HSI score. This labeling tool is not utilized in the final classifications, and has no regulatory implication.

FINALIZATION OF CLASSIFICATIONS

This Statement of Reasons document was submitted in draft form to the Commissioners of Public Health, Agriculture and Economic & Community Development and to the Secretary of the Office of Policy & Management for review and comment. Each agency contacted the Department by phone, but none formally commented on the draft Statement of Reasons. The report was therefore finalized and no further changes were made to the classification maps beyond those detailed in Appendix VI of this document. The final maps will be made available on the Department web site at www.ct.gov/deep/streamflow.

CONCLUSIONS

The Commissioner, after consultation with the Commissioner of Public Health and consideration of the factors listed in RCSA Sec. 26-141b-5, prepared a map of proposed classification indicative of the degree of human alteration of natural stream flow for the Connecticut River Basin. The proposed classifications were public noticed as required and an interactive map of the proposed classifications was made available online. Submitted public comments were subsequently considered, and a number of classifications were modified as a result of the information provided. The final mapping will be made available through the Department web site at www.ct.gov/deep/streamflow and notification of the availability of the adopted classifications will be published in the Connecticut Law Journal. Regulated dam owners will be required to begin making releases in accordance with RCSA Sec. 26-141b-6 ten years after notice of the final classifications is published in the Connecticut Law Journal.

2/6/18

Date

Robert E. Kaliszewski

Robert E. Kaliszewski
Deputy Commissioner

APPENDIX I

PUBLIC NOTICE OF PROPOSED STREAM FLOW CLASSIFICATIONS CONNECTICUT RIVER BASIN

In accordance with the Connecticut Regulations of Connecticut State Agencies Section 26-141b-5, the Commissioner of the Connecticut Department of Energy and Environmental Protection hereby gives notice that the Department, through consideration of the factors required by the regulations, has prepared maps of proposed Stream Flow Classifications for the Connecticut River Basin.

The maps are available on-line at www.ct.gov/deep/streamflow. Such maps include river and stream segments in the following towns: Avon, Barkhamsted, Berlin, Bloomfield, Bolton, Bristol, Burlington, Canton, Chester, Colchester, Colebrook, Cromwell, Deep River, Durham, East Granby, East Haddam, East Hampton, East Hartford, East Lyme, East Windsor, Ellington, Enfield, Essex, Farmington, Glastonbury, Granby, Haddam, Hartford, Hartland, Harwinton, Hebron, Lyme, Manchester, Marlborough, Middlefield, Middletown, New Britain, New Hartford, Newington, Norfolk, Old Lyme, Old Saybrook, Plainville, Plymouth, Portland, Rocky Hill, Salem, Simsbury, Somers, South Windsor, Stafford, Suffield, Tolland, Vernon, West Hartford, Wethersfield, Winchester, Windsor, and Windsor Locks.

Public information sessions will be held, as follows:

Goodwin College
The River Room (Room 120)
195 Riverside Drive
East Hartford, CT
Tuesday, April 11, 2017

2 sessions: 2:00 – 4:00 pm and 6:00 – 8:00 pm

A short presentation on how the Stream Flow Classification maps were developed will be given and Department staff will be on hand to answer questions at these information sessions.

The proposed Stream Flow Classification of a stream or river segment is based on ecological conditions and human use characteristics, and determines flow management goals and applicable flow standards for that segment. Proposed Stream Flow Classifications were developed using known information on factors indicative of the degree of human alteration of natural stream flow, environmental flow needs and existing and future needs for public water supply.

The public may submit additional information or comments for the Commissioner's consideration on the proposed classification of a specific river or stream system pertaining to, but not limited to: (i) the factors for consideration in the regulations; (ii) the impact of the proposed classification on any prior investment made to develop a permitted or registered diversion and the alternatives, if any, to the diversion including cost factors and feasibility of such alternatives; (iii) the relationship of an existing or proposed diversion to economic development or jobs; and (iv) the practicality of, and potential for, achieving ecological benefit from restoring streamflow

to the specific river or stream system. Written comments may be submitted by email to deep.streamflowclass@ct.gov, or may be mailed to Corinne Fitting, Department of Energy & Environmental Protection, Bureau of Water Protection and Land Reuse, 79 Elm Street, Hartford, Connecticut, 06106-5127. The Department is accepting additional information or written comments on the proposed Stream Flow Classifications until Friday, June 2, 2017.

Additional information on the Stream Flow Standards and Classifications is available on the Department's website at: www.ct.gov/deep/streamflow . Anyone requiring more information may contact the Department by email at deep.streamflowclass@ct.gov or by phone at 860-424-3020.

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action and Equal Opportunity Employer that is committed to complying with the Americans with Disabilities Act. To request an accommodation contact us at 860-418-5910 or email deep.accommodations@ct.gov.

APPENDIX II

**Mailing List for Public Notice of Proposed Stream Flow Classifications
Connecticut River Basin
Mailed March 1, 2017**

Sal	Contact LN	Contact FN	Contact Title	Company	Address 1	Address 2	City	State	Zip Code	Zip Ext
Mr.	Corvo	William		Kleen Energy Systems, LLC	90 Industrial Park Rd		Middletown	CT	06457	
Mr.	DeGrandi	Thomas	Superintendent	Tournament Players Club of CT, Inc.	1 Golf Club Road		Cromwell	CT	06416	
Mr.	Randazzo	James	Acting Director	Metropolitan District Commission and Town of Portland	555 Main Street	P.O. Box 800	Hartford	CT	06142	0800
Ms.	Morgan	Jane	President	Winding Brook Turf Farm, Inc.	240 Griswold Road		Wethersfield	CT	06109	
Mr.	White	James A	Plant Manager	Algonquin Power Windsor Locks, LLC	26 Canal Bank	P.O. Box 289	Windsor Locks	CT	06096	
Mr.	Russo	Guy	Director	Middletown	82 Berlin Street		Middletown	CT	06457	
Mr.	Susco	Vincent	Administrator	East Hampton	20 Gildersleeve Drive	P.O. Box 218	East Hampton	CT	06424	0218
Ms.	Morgan	Jane	President	Winding Brook Turf Farm, Inc.	240 Griswold Road		Wethersfield	CT	06109	
Mr.	Jarzavek	S. William	Director	Cromwell Fire District, Water Division, Middletown Water & Sewer Department	P.O. Box 104	1 West Street	Cromwell	CT	06416	
Mr.	Jarzavek	William	Director	Cromwell Fire District, Water Division	1 West Street		Cromwell	CT	06416	
Mr.	Knuttel	Arthur J.			124 South Main Street		East Windsor	CT	06425	
Mr.	Joyce	J. Michael			2 Elm Street		Windsor Locks	CT	06096	
Mr.	Anderson	David			165 Broad Street		Wethersfield	CT	06109	
Mr.	Burnham	Donald			1897 Main Street		East Hartford	CT	06108	

Sal	Contact LN	Contact FN	Contact Title	Company	Address 1	Address 2	City	State	Zip Code	Zip Ext
Mr.	Chalany	William			21 Cedar Lake Rd		Chester	CT	06412	
Mr.	Collins	William			1145 Cromwell Avenue		Rocky Hill	CT	06067	
Mr.	Mannhardt	Samuel			Po Box 351		Middletown	CT	06457	
Mr.	Egan	Peter			200 Corporate Place	Suite 202	Rocky Hill	CT	06067	
Mr.	Radka	David			93 West Main Street		Clinton	CT	06413	
Mr.	Dufford	William			593 Tryon Street		South Glastonbury	CT	06073	
Mr.	Ferrari	Richard P.			675 Main Street		South Glastonbury	CT	06073	
Mr.	Gardner Jr.	Marshal L			400 Brook Street	P.O. Box 260	Rocky Hill	CT	06067	
Mr.	DesRoberts	David			PO Box 1001		Middletown	CT	06457	
Mr.	Gondek	Alexander			181 Main Street		South Glastonbury	CT	06073	
Mr.	Horton	Kenneth			194 Tryon Street		South Glastonbury	CT	06073	
Mr.	O'Meara	Peter			1022 Palisado Avenue		Windsor	CT	06095	
Mr.	Stewart	George F.			1338 River Blvd		Suffield	CT	06078	
Mr.	Kogut	Brian F.			147 Ann Street		Meriden	CT	06450	
Mr.	Malee	Stanley			768 Mapleton Ave		Suffield	CT	06078	
Mr.	Brignole	Timothy			C/O Brignole and Bush, LLC	73 Wadsworth St	Hartford	CT	06106	
Mr.	Randazzo	Jim			555 Main Street		Hartford	CT	06142	
Mr.	Millane	Neil A			P.O. Box 800		Cromwell	CT	06416	
Mr.	Matis	Louis P.			901 Marquette Avenue	Suite 2300	Minneapolis	MN	55402	
Mr.	Lewis	Steve			1700 Mountain Road		West Suffield	CT	06093	

Sal	Contact LN	Contact FN	Contact Title	Company	Address 1	Address 2	City	State	Zip Code	Zip Ext
Mr.	Spielman	Arthur E.			39 Ellington Road		South Windsor	CT	06074	
Ms.	Sullivan	Erin			Manufacturing Division	400 Main St	East Hartford	CT	06108	

**Mailing List for Public Notice of Proposed Stream Flow Classifications
Connecticut River Basin
E-Mailed March 1, 2017**

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APPENDIX III

List of Individuals Who Submitted Comment Letters

Letter ¹	Submitted by
1	David L. Radka, Director of Water Resources and Planning, Connecticut Water Company, 93 West Main Street, Clinton, CT 06413-1600
2	Frank C. DeFelice and Debra A. DeFelice, 32 Cherry Lane, Durham, CT 06422
3a	Patricia Young, Watershed Coordinator, Salmon River Watershed Partnership, 1066 Saybrook Rd., Haddam, CT 06438
3b	Patricia Young, Program Director, Eightmile River Watershed, 1066 Saybrook Rd., Haddam, CT 06438
4	Robert J. Young, Acting Director Water & Sewer Department, City of Middletown, 82 Berlin St., Middletown, CT 06457
5	Scott W. Jellison, Chief Executive Officer, The Metropolitan District Commission, 555 Main St., P.O. Box 800, Hartford, CT 06142
6	Bonnie Reemsnyder, First Selectwoman, Old Lyme, breemsnyder@oldlyme-ct.gov

¹ The full text of the letters can be found at www.ct.gov/deep/streamflow.
Stream Flow Classification Statement of Reasons
Connecticut River Basin

APPENDIX IV

List of Factors for Consideration in Classification Excerpt from the Stream Flow Standards and Regulations

RCSA Sec. 26-141b-5. Adoption of river or stream system classifications.

(a) The commissioner, after consultation with the Commissioner of Public Health, shall prepare a map of proposed classifications indicative of the degree of human alteration of natural stream flow after consideration of the following factors:

- (1) A river or stream segment that is immediately downstream of an existing dam that impounds a public water supply source registered or permitted in accordance with section 22a-365 to 22a-378a of the Connecticut General Statutes, or that intersects a Level A aquifer protection area as approved by the Commissioner pursuant to section 22a-354d of the Connecticut General Statutes shall not be classified as Class 1 or 2;
- (2) A river or stream segment that is immediately downstream of an existing dam that impounds a water supply source registered or permitted in accordance with section 22a-365 to 22a-378a of the Connecticut General Statutes, other than a public water supply, shall not be classified as Class 1 or 2;
- (3) Size and location of permitted and registered diversions within the watershed, to the extent that these diversions, if operated to the maximum extent allowed in accordance with the provisions of the permit or registration, may affect the physical characteristics of flow, volume or velocity of water in the stream channel or may alter the daily, seasonal or inter-annual flow characteristics of the river or stream system;
- (4) Size and location of dams, reservoirs and other impoundments within the watershed, to the extent that these dams, reservoirs and other impoundments may affect the physical characteristics of flow, volume or velocity of water in the stream channel or may alter the daily, seasonal or inter-annual flow characteristics of the river or stream system;
- (5) Size and location of return flows of water within the watershed, to the extent that these return flows may affect the physical characteristics of flow, volume or velocity of water in the stream channel or may alter the daily, seasonal or inter-annual flow characteristics of the river or stream system;
- (6) Existing land cover in the upstream watershed, to the extent that human development and associated impervious land cover may affect the physical characteristics of flow, volume or velocity of water in the stream channel or may alter the daily, seasonal or inter-annual flow characteristics of the river or stream system;
- (7) Planned land use in the upstream watershed, as contained in an applicable local or state plan, including the state plan of conservation and development, to the extent that future human development and associated impervious land cover may affect the physical characteristics of flow, volume or velocity of water in the stream channel or may alter the daily, seasonal or inter-

annual flow characteristics of the river or stream system;

(8) Available data related to the distribution and abundance of plant and animal species, such as wild trout, which are dependent upon stream and riparian habitat;

(9) Available data related to the presence of anadromous fish runs or where anadromous fish are actively being restored or are targeted for restoration;

(10) Existence of trout management areas and other recreational resources;

(11) 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;

(12) 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;

(13) River or stream systems or segments that are identified as a potential source of water supply in an approved coordinated water system plan prepared in accordance with section 25-33h of the Connecticut General Statutes or a water supply plan in effect as of the date of such mapping, to the extent that these potential water supply sources, if developed, may affect the physical characteristics of flow, volume or velocity of water in the stream channel or may alter the daily, seasonal or inter-annual flow characteristics of the river or stream system;

(14) River or stream systems or segments that are identified as a potential source of water supply in an approved coordinated water system plan prepared in accordance with section 25-33h of the Connecticut General Statutes or a water supply plan in effect as of the date of such mapping and where there has been a significant investment toward development of such potential source, including but not limited to capital expenditures, scientific or engineering studies or land acquisition cost, shall not be classified as Class 1 or 2;

(15) River or stream systems or segments that are identified by the Commissioner of Public Health pursuant to Section 59 of Public Act 11-242;

(16) Practicality of, and potential for, restoring stream flow patterns to achieve consistency with the Stream Flow Standards and Regulations due to the extent of prior channel modification or the impact of development and impervious cover in the watershed as of the date of such mapping;

(17) Publicly available data regarding the impact of stream classification on a community water supply's margin of safety; and

(18) Any other factor indicative of the degree of human alteration of natural stream flow.

APPENDIX V

METHODOLOGY FOR DEFINING PRELIMINARY STREAM FLOW CLASSIFICATIONS PURSUANT TO SECTIONS 26-141B-1 TO 26-141B-8 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES

Revised: 2 May 2016

INTRODUCTION

The State of Connecticut Stream Flow Standards and Regulations (*Sections 26-141b-1 to 26-141b-8 of the Regulations of Connecticut State Agencies*) require that the Department of Energy and Environmental Protection (CT DEEP) in consultation with the Department of Public Health (DPH) prepare a State-wide map of proposed classifications indicative of the degree of human alteration of natural stream flow. The regulations define four stream flow class standards (See Table 1). The regulations include consideration of 18 factors when adopting river or stream system classifications (*Sections 26-141b-5 Adoption of river or stream system classifications*).

The process described below represents the data and methodology used to evaluate those 18 factors to assign stream segments a proposed stream flow class for public comment. The numbers in parentheses below reflect the stream flow classification factor listed under Sec. 26-141b-5(a). Sec. 26-141b-2 defines a stream segment as a discrete, contiguous reach of river or stream channel for which a uniform classification has been adopted. For the purposes of proposing classifications, stream segments were derived from the National Hydrography Dataset (NHD) developed at a 1:24,000 scale (1 inch = 2000ft) by USGS for the State of Connecticut using Wrap Hydro tools (<http://www.crwr.utexas.edu/gis/gishydro03/WRAPhydro/WRAPhydro.htm>), an extension for ArcGIS. There are approximately 36,000 stream segments in the State. The average length of the stream segments is approximately 0.3 miles long.

Stream flow Class	Stream Condition	Narrative Standard
1	Free Flowing Stream	Maintain stream flow and water levels to support and maintain habitat conditions supportive of an aquatic, biological community characteristic typically of free-flowing stream systems
2	Minimally Altered	Maintain stream flow and water levels to support and maintain habitat conditions supportive of an aquatic, biological community characteristic minimally altered from that of typically of free-flowing stream systems
3	Moderately Altered	Maintain stream flow and water levels to support and maintain habitat conditions supportive of an aquatic, biological community characteristic moderately altered from that of typically of free-flowing stream systems
4	Altered	Exhibit substantially altered stream flow conditions caused by human activities to provide for societal needs

Table 1: Narrative Standard for Each Stream flow Class

This process will provide all stream segments throughout the state with a class of 1, 2, or 3 designation. CTDEEP is not initially proposing any Class 4 designations; as such designation requires specific information on societal needs, economic costs and environmental impacts that will be considered on a case by case basis.

The process described below entails three steps. The first is to target streams identified in the regulations that shall not be classified as Class 1 or 2. These streams are classified as a Class 3 in this process. Steps 2 and 3 are then used to assign proposed classifications to the remaining streams. The second step involves assigning the remaining streams a classification value based on an index that characterizes current stream flow conditions. The third involves modifying (increasing or decreasing) a stream flow classification based on the additional factors for consideration which describe unique ecological attributes or goals for a particular stream segment.

STEP 1: CLASS 3 FACTORS

Description: *Any streams meeting the criteria for the factors described below are assigned a Class 3 designation.*

(1) A river or stream immediately downstream of an existing dam that impounds a public water supply source or intersects a Level A aquifer protection area.

A public water supply source is a water body listed as reservoir in the State of Connecticut DPH database. Immediately downstream of a dam is defined as the stream segments below the reservoir where the annual Q99 flow is less than two times the annual Q99 flow going into the reservoir. The annual Q99 flow is a very low flow where the naturally occurring daily stream flow that is predicted to equal or exceeded on 99 percent of the days in a year. The annual Q99 stream flow is estimated using methods developed by the United States Geological Survey (USGS) (Ahern 2010).

Level A Aquifer Protection Areas for a public water supply well are delineated in accordance with Connecticut General Statutes (CGS) Section 22a-354c or 22a-354z. If the Level A area intersects a portion of a stream segment, the full segment is designation Class 3.

(2) A river or stream immediately downstream of an existing dam.

Dams are defined as consumptive diversions identified as an impoundment in the CT DEEP diversion spatial dataset. Immediately downstream of an existing dam is defined in the same way as in factor (1), see above.

(14) River or stream identified as potential source of water supply with significant investment.

Water supply Plans prepared in accordance with CGS Section 25-32d and 25-33h, as well as the DPH “High Quality Source” list compiled under CGS 25-33q, were reviewed in detail for

potential future sources of public water supply. In order to consider a potential source, a specific location had to be available to associate the potential source with a specific stream segment. Locations for the proposed sources were identified in the referenced planning documents and mapped in ArcGIS for consideration in the classification system. Information on significant investment was also solicited from the DPH and the water companies within the basin of consideration because the Water Supply Plans do not typically contain documentation of investment in the future sources.

To determine which of the proposed sources had a “significant investment”, CT DEEP used any available information on diversion permitting status, capital expenditures, scientific or engineering studies and land acquisition by the water system. In addition to the sources identified by such information, the timeframe within which the proposed source was needed was considered, and even if there was no information on permitting status, etc., it was assumed that sources proposed within the five-year planning period likely had “significant investment”, as use was imminent. Proposed sources with “significant investment” were then given a Class 3 designation under section 26-141b-5(a)(14). The only exception to this were proposed sources that were small (< 0.05 mgd) bedrock wells. These are below the threshold for a diversion permit and are considered unlikely to have a significant impact on stream flow. The proposed sources for which the planning period is further out than five years or for which no information on investment status was available are given consideration in the classification system under the “Other Factors” discussed below in Step 3 of the process.

STEP 2: HYDROLOGIC STRESSOR INDEX (HSI) FACTORS

Description: *For all remaining unassigned stream segments (i.e. those not assigned to stream flow class 3 in step 1), a class is assigned based on an index that combines the four factors below. Each factor is given a metric value of 1, 2 or 3. Metric values are assigned based on the potential degree of alteration to natural stream flow conditions. A ‘1’ indicates little or no stress to natural stream flow conditions, a ‘2’ indicates minimally altered stream flow conditions and a ‘3’ indicate high stress and alteration from natural stream flow conditions. The values for each of the four metrics are added together to obtain a Hydrologic Stressor Index (HSI) value. The HSI values ranges from 4 to 12. Analogous to the metrics, lower HSI values indicate that in-stream and surrounding drainage area conditions do not stress or alter natural stream flow, whereas higher index values indicate that conditions significantly stress and alter stream flow. HSI values are partitioned into three groups corresponding to a preliminary stream class. An HSI value of 4 - 5 represents Class 1 or ‘natural conditions’, values of 6 - 8 represent Class 2 or ‘near natural conditions’, and values of 9 - 12 represent Class 3 of ‘altered conditions.’ A description of how each metric was defined and calculated is provided below.*

(3) Size and location of permitted and registered diversions within the watershed.

Registered diversions listed in CT DEEP diversion spatial data layer as ‘consumptive’ and permitted diversion listed as ‘consumptive’ and ‘active’ were included in the analysis. Calculated the maximum withdrawal amount and divided by the annual Q99 to calculate the percent of Q99 flows withdrawn.

Metric Value	Maximum Withdrawal / Q99	
1	0	(4) Size and location of dams, reservoirs and other impoundments within the watershed.
2	0 – 100%	
3	>100%	

Large dams using a combined spatial dataset that included information from CT DEEP database and National Inventory of Dams. Large dams were defined as those that were greater or equal to 15 ft in height or having a storage capacity greater than or equal to 15 acre-feet. The number of large dams was divided by the total number of upstream stream miles.

Metric Value	# of Dams / Stream Mile
1	0
2	> 0 – 0.1
3	> 0.1

(5) Size and location of return flows of water within the watershed.

Only municipal NPDES discharges were included in the analysis. Calculated the design flow of the sewage treatment plant divided by annual Q99 to calculate the percent return flow greater than Q99 flows.

Metric Value	Return Flow / Annual Q99
1	0
2	0 – 75%
3	>75%

(6) Existing development and impervious cover in the upstream watershed.

2006 Impervious Cover dataset from the National Land Cover Dataset. Calculated the percent impervious cover in the upstream watershed.

Metric Value Percent IC

1	0 - 2%
2	2 - 5%
3	> 5 %

STEP 3: ADDITIONAL FACTORS

Description: *Applies to streams that were not classified as a Class 3 in step 1. Includes additional factors in the regulation that can modify (increase the stream flow class (i.e. 1 to 2) or decrease the stream flow class (i.e. 2 to 1)) the classification value calculated using the HSI. The other factors primarily represent a present or future goal for a stream segment or a unique ecological attribute. Each factor is defined as an increaser or decreaser. The total number of increasers and decreasers were added for each stream segment. If there were more increasers than decreasers present in a stream segment than the stream class was increased up by one class (i.e. 2 to 3). If there were more decreasers present in a stream segment than the stream class was decreased by one class (i.e. 2 to 1). Note that the regulations did not provide for any weighting of the factors, so all were given equal weight.*

(7) Planned land use in the upstream watershed for future development. (↑ Increaser)

Stream segment that intersects a growth area defined in the Connecticut Plan of Conservation and Development.

(8) Available data on species that are dependent upon stream and riparian habitat. (↓ Decreaser)

These were defined as stream segments that where high densities of wild brook trout (> 73 wild brook trout/ hectare) have been sampled.

(9) Available data related to the presence or restoration of anadromous fish runs. (↓ Decreaser)

Stream segments that have been identified by CT DEEP where anadromous fish runs occur or are being actively restored or targeted for restoration.

(10) Existence of trout management areas. (↓ Decreaser)

Stream segments that have been identified by CT DEEP as trout management areas.

(11) The location of stream gages operated by USGS that have been identified as an index station. (↓ Decreaser)

Stream segments within the watershed upstream of USGS gages identified as an index station in Ahern 2007.

(12) Areas designated as protected for conservation purposes. (↓ Decreaser)

Stream segments that intersect with the most recent CT DEEP protected open space mapping (POSM) spatial dataset or State conservation area identified in the CT DEEP property spatial dataset.

(13) River or stream segments identified as a potential source of water supply; and **(15)** River or stream segments identified by the DPH pursuant to Section 59 of Public Act 11-242. (↑ Increaser)

Stream segments containing a potential source identified in a Water Supply Plan or on the “High Quality Source” list by the CT DPH in accordance with CGS 25-33q, and planned for development beyond the five-year planning period. (Sources proposed for development within the five-year planning period were considered a Class 3 under Step 1 above).

(16) Practicality and / or potential for restoring stream flow patterns to achieve consistency with the Stream Flow Standards and Regulations due to the extent of prior channel modification or the impact of development and impervious cover in the watershed as of the date of such mapping. (↓ Decreaser or ↑ Increaser)

Factor number 16 will be evaluated by the Department when adopting classifications on a case by case basis.

(17) Publically available data regarding the impact of stream classification on a community’s water supply’s margin of safety. (↑ Increaser)

Factor number 17 will be evaluated by the Department when adopting classifications on a case by case basis. However, numerous off-ramps to reduce releases when margin of safety is impacted were provided in the regulations to assist water companies, so this has little impact on the stream flow classifications.

(18) Any other factor indicative of the degree of human alteration of natural stream flow. (↓ Decreaser or ↑ Increaser)

Factor number 18 will be evaluated by the Department when adopting classifications on a case by case basis.

LITERATURE CITED

Ahearn, E.A., 2007, Flow durations, low-flow frequencies, and monthly median flows for selected streams in Connecticut through 2005: U.S. Geological Survey Scientific Investigations Report 2007-5270, 33 p.

**APPENDIX VI
TABLE OF SEGMENT-SPECIFIC COMMENTS OR DATA AND RESPONSE**

Segment	Stream	Town	Comment	Response	Letter
106003524	Ogden Brook	Vernon	Existing, registered stratified drift public water supply wells; each 0.1728 mgd	Level B area for PWS well field. Can be considered significant investment. Revise to Class 3.	1
106003525	Ogden Brook	Vernon	Existing, registered stratified drift public water supply wells; each 0.1728 mgd	Level B area for PWS well field. Can be considered significant investment. Revise to Class 3.	1
106003542	Broll Brook	Vernon	Existing, registered stratified drift public water supply wells; each 0.1728 mgd	Level B area for PWS well field. Can be considered significant investment. Revise to Class 3.	1
106003416	Tunnell Brook	Vernon	Existing, registered stratified drift public water supply wells; each 0.1728 mgd	Segment is not adjacent to the PWS well field; Until Level A Mapping is completed and it is shown to be within the Aquifer Protection Area, this will remain Class 1.	1
106003415	Tankerhoose n River	Vernon	Existing, registered stratified drift public water supply wells; each 0.1728 mgd	Segment is not adjacent to the PWS well field; Until Level A Mapping is completed and it is shown to be within the Aquifer Protection Area, this will remain Class 1.	1
106003411	Tankerhoose n River	Vernon	Existing, registered stratified drift public water supply wells; each 0.1728 mgd	Level B area for PWS well field. Can be considered significant investment. Revise to Class 3.	1
106000272	Trib to Hockanum River	South Windsor	Existing, registered bedrock public water supply wells; Woodland Park 0.252 mgd, Pine Knob 0.648 mgd	The diversion metric reflects the presence of these wells. The stream is within the estimated source area for these wells, so include additional factor of DPH HQW list, which changes classification to Class 3.	1
106003871	Abbey Brook	Ellington	Existing, registered and permitted public water supply wells (Ellington Acres); 4 wells permitted: #3 - 0.118 mgd, #4 - 0.197 mgd, #1 - #4 combined 0.43 mgd, #1 - #3 combined 0.359 mgd	The diversion metric reflects the presence of these wells. The stream is within the estimated source area for these wells, so include additional factor of DPH HQW list, which changes classification to Class 2.	1
106003600	Trib to Scantic River	E Windsor/ S Windsor	Existing, registered bedrock public water supply well (Farnham Estates); 0.504 mgd	The diversion metric reflects the presence of these wells. No change to the classification.	1
106004255	Fourmile Brook	Suffield	Existing, registered bedrock public water supply wells (Mapleton); 2 wells, #1 - 0.2405 mgd, #2 - 0.3384 mgd	The diversion metric reflects the presence of these wells. The stream is within the estimated source area for these wells, so include additional factor of DPH HQW list, which changes classification to Class 3.	1

Segment	Stream	Town	Comment	Response	Letter
105001172	Trib to Unionville Brook	Burlington	Existing, registered bedrock public water supply well; 0.144 mgd	The estimated source areas for these wells do not intersect the stream and are therefore not considered in the classification. No change to the classification.	1
106002829	Raymond Brook	Hebron	Existing, permitted bedrock public water supply wells; 3 wells 0.105 mgd combined	The estimated source areas for these wells do not intersect the stream and are therefore not considered in the classification. No change to the classification.	1
106002692	Trib to Amston Lake	Lebanon	Existing, permitted bedrock public water supply wells; 2 wells 0.075 mgd combined	The estimated source areas for these wells do not intersect the stream and are therefore not considered in the classification. No change to the classification.	1
106002705	Trib to Amston Lake	Hebron	Existing, permitted bedrock public water supply wells; 2 wells 0.075 mgd combined	The estimated source areas for these wells do not intersect the stream and are therefore not considered in the classification. No change to the classification.	1
106002699	Trib to Raymond Brook	Hebron	Existing, permitted bedrock public water supply well; 0.0576 mgd	The estimated source areas for these wells do not intersect the stream and are therefore not considered in the classification. No change to the classification.	1
106002380	Trib to Jeremy River	Colchester	Exempt, 6 bedrock public water supply wells (Westchester Village); available supply 28,300 gpd combined	Although these wells are below the threshold requirement to obtain a diversion permit, the source area intersects the stream. The additional factor of DPH HQW list was added, but did not result in a classification change.	1
106002250	Pine Brook	Colchester	Exempt, 2 bedrock public water supply wells (Ponemah Village); available supply 21,600 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1
106002102	Lake Hayward Brook	E Haddam	Exempt, 4 bedrock public water supply wells (Lake Hayward); available supply 50,000 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1
106002046	Trib to Moodus River	E Haddam	Exempt, 2 bedrock public water supply wells (Banner Village); available supply 50,000 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1

Segment	Stream	Town	Comment	Response	Letter
106001861	Trib to Moodus River	E Haddam	Exempt, 2 bedrock public water supply wells; available supply 50,000 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1
106002530	Trib to Cattle Lot Brook	E Haddam	Exempt, 3 bedrock public water supply wells (Baker Hill); available supply 40,500 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1
106002425	Cattle Lot Brook	E Haddam	Exempt, 3 bedrock public water supply wells (Baker Hill); available supply 20,300 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1
106002383	Muddy Gutter Brook	E Haddam	Exempt, 10 bedrock public water supply wells (Spice Hill); available supply 50,000 gpd combined	Although these wells are below the threshold requirement to obtain a diversion permit, the source area intersects the stream. The additional factor of DPH HQW list was added, which resulted in a classification change to Class 3.	1
106001183	Trib to Parmalee Brook	Durham	Exempt, 2 bedrock public water supply wells (Durham Center); available supply 20,300 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1
106001171	Trib to Roaring Brook	Haddam	Exempt, 5 (2 dug, 3 bedrock) public water supply wells; available supply 12,500 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1
106002764	Jeremy River	Hebron	Exempt, 2 bedrock public water supply wells; available supply 24,300 gpd combined	Although these wells are below the threshold requirement to obtain a diversion permit, the source area intersects the stream. The additional factor of DPH HQW list was added, but did not result in a classification change.	1
106002765	Trib to Webster Brook	Berlin	Exempt, 2 bedrock public water supply wells; available supply 21,600 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1

Segment	Stream	Town	Comment	Response	Letter
106002829	Raymond Brook	Hebron	Exempt, 1 bedrock public water supply wells (Wellswood); available supply 12,100 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1
106003110	Porter Brook	Manchester/ E Hartford	Exempt, 2 bedrock public water supply wells (Redwood Farms); available supply 50,000 gpd combined	Although these wells are below the threshold requirement to obtain a diversion permit, the source area intersects the stream. The additional factor of DPH HQW list was added, which resulted in a classification change to Class 3.	1
106002638	Lyman Brook	Marlborough	Exempt, 2 bedrock public water supply wells (Florence Lord); available supply 35,000 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1
106002744	Trib to Dickinson Creek	Marlborough	Exempt, 2 bedrock public water supply wells (Sachem Village); available supply 50,000 gpd combined	Although these wells are below the threshold requirement to obtain a diversion permit, the source area intersects the stream. The additional factor of DPH HQW list was added, but did not result in a classification change.	1
106001954	Lyman Brook	Marlborough	Exempt, 2 bedrock public water supply wells (Forest Homes); available supply 13,500 gpd combined	Although these wells are below the threshold requirement to obtain a diversion permit, the source area intersects the stream. The additional factor of DPH HQW list was added, which resulted in a classification change to Class 3.	1
106001954	Lyman Brook	Marlborough	Exempt, 2 bedrock public water supply wells (Laurel Hill); available supply 22,900 gpd combined	These wells are below the threshold requirement to obtain a diversion permit, and the estimated source area doesn't intersect the stream, therefore expected stream flow impact would be minimal, no change to classifications.	1
106001336	Trib to Cream Pot Brook	Durham	No stream or river exists. Aerial photographs provided from 1963 & 2013 indicate the absence of streams or rivers in the area. A survey provided, conforming to Class A-2 standards, indicates that no stream or river is located within this area.	Delete segment.	2
106002432	Jeremy River	Colchester	The Norton Mill Dam removal was completed in 2016, so the dam metric should be modified.	There is no large dam included on this segment. Dam metric is a 2 due to other dams in the upstream watershed, so no change to classification.	3a

Segment	Stream	Town	Comment	Response	Letter
Multiple	Salmon River Watershed	multiple towns	Open Space mapping is available for the entire watershed that is more comprehensive than what DEEP has.	The mapping was shared with DEEP in a GIS format and utilized to update the mapping application. The resulting information raised the classification on 5 segments in the watershed: 106,002,845 (from Class 3 to Class 2); 106,001,654 (2 to 1); 106,002,421 (2 to 1); 106,002,896 (2 to 1); and 106,003,040 (3 to 2)	3a
106002993	Blackledge River	Glastonbury	A dam removal is currently in the design process for a dam on the Blackledge River, so the dam metric will need to be modified.	Once the dam is removed, the dam metric can be modified; no change to the classification at this time.	3a
106002284	Roaring Brook	Middletown	This stream segment begins at the toes of the Adder Reservoir Dam and flows towards the Higby Reservoir. It can also be diverted to Fall Brook downstream of the Higby Reservoir. The map needs to be revised to depict this segment's actual location	Revise based on updated NHD, which reflects description. Change to Class 3.	4
106002284	Roaring Brook	Middletown	The stream segment is located immediately downstream of the Adder Reservoir Dam and should automatically be classified as a Class 3 stream.	Change to class 3	4
106002288	Roaring Brook	Middletown	Segment does not receive flow from the Adder Reservoir. The map needs to be revised to depict a separation between this stream segment and the Adder Reservoir.	Delete segment	4
106002268	Trib to Fall Brook	Middletown	This stream segment is located immediately downstream of the Higby Reservoir Dam. The blow offs and any leakage from the toe of the dam are directed to this segment. This segment should automatically be classified as a Class 3 stream.	Change to Class 3	4
106002292	Trib to Fall Brook	Middletown	This stream segment is located immediately downstream of the Higby Reservoir Dam. The blow offs and any leakage from the toe of the dam are directed to this segment. This segment should automatically be classified as a Class 3 stream.	Change to class 3 along with HydroID 106002268	4

Segment	Stream	Town	Comment	Response	Letter
106002158	Fall Brook	Middletown	This stream segment lies within the reservoir and connects Higby Reservoir No. 3, Higby Reservoir No. 2 and Higby Reservoir No. 1. This segment flows through a culvert under CT Route 66 between Reservoirs No. 3 and No. 2; and flows through a cast iron pipe	Delete segment	4
105000310	Farmington River Main Stem	New Hartford	This segment is not "free-flowing" and cannot always exhibit the flow conditions of a free-flowing river or stream. Because of the presence of at least 8 major large dams, and the same number of large man-made impoundments with significant upstream storage; "Public Water Supply Dam" should be "YES" (Richard's Corner Dam, Saville Dam-Barkhamsted Reservoir); and "Concerns with Margin of Safety" should be "YES" - MDC's Safe Yield and Margin of Safety would be significantly impacted if streamflow releases were required from Saville Dam.	A class 1 stream is not necessarily "free-flowing", but maintains habitat conditions supportive of an aquatic community characteristic of a free-flowing system. The flow management plan in place achieves this, so a Class 1 is appropriate. As detailed in the classification methodology document (Appendix V), the influence of a dam dissipates at some distance downstream, when natural inflow from ground water and tributaries would support stream flow. The "Public Water Supply dam" factor is therefore reflected in the classifications of upstream segments, which are Class 3. Note that the HIS for this segment is a total of 8 (not 10), culminating in a stream flow class of 2 for the HSI. The "2" was then increased to a "1" to reflect the presence of the trout management area and anadromous fish run. Low Margin of Safety off-ramps are detailed in RSCA Sec 26-141b-6. No change to classification.	5
105000320	Farmington River Main Stem	New Hartford	This segment should be classified as Class 3 or Class 4. The Hydrologic Stressor Total of 10 indicates a Class 3 or 4 classification: "Concerns with Margin of Safety" should be "YES" - MDC's Safe Yield and Margin of Safety would be significantly impacted if streamflow releases were required from Saville Dam.	The HSI total for this segment is an 8, not 10. (See above discussion for segment 105000310). No change to classification.	5

Segment	Stream	Town	Comment	Response	Letter
105000339	East Branch Farmington River	New Hartford	This segment should be classified as Class 4 due to the substantially altered flows and flow patterns that have been maintained for more than 100 years. The typical stream flows are de minimis and subject to release of floodwaters from Barkhamsted Reservoir (releases up to and over 3,000 cfs); "Dam Metric" should be rated "3" - two large dams per 2 miles; "Anadromous Fish Run" should be "NO"; "Concerns with Margin of Safety" should be "YES" - MDC's Safe Yield and Margin of Safety would be significantly impacted if streamflow releases were required from Saville Dam.	The HSI is a total of 7 (so a class 2), but it is considered a class 3 due to the Public Water Supply reservoir upstream. Insufficient documentation was provided to support a Class 4 designation. Low Margin of Safety off-ramps are detailed in RSCA Sec 26-141b-6. If water was available for releases, there is habitat potential in this segment. No change to classification.	5
105001576	East Branch Farmington River	New Hartford	Segment should be Class 4 due to substantially altered flows and flow patterns that have been maintained for more than 100 years. Stream flows are subject to releases from Richard's Corner Dam and release of floodwaters from Barkhamsted Reservoir; "Dam Metric" should be rated "3" - two large dams per 2 miles; A significant portion of this stream segment is shown beneath Lake McDonough. This section does not physically exist as a stream and as such, should not be classified; "Anadromous Fish Run" should be "NO" - This is not an anadromous fish run	Only the segment below the dam is subject to classification under the regulations. Additional information was requested and sufficient information regarding the potential for Class 4 for this segment was received to support such classification. Change classification to Class 4.	5
105001738	Storehouse Brook at Saville Dam	Barkhamsted	This segment is incorrectly designated as "Class 1". This segment is not a stream; it is a man-made concrete and granite channel and concrete culvert pipe. As such, it should not be classified at all.	Delete segment.	5
105000513	Storehouse Brook at Saville Dam	Barkhamsted	This segment is incorrectly designated as "Class 1". This segment is not a stream; it is a man-made concrete and granite channel and concrete culvert pipe. As such, it should not be classified at all.	Delete segment.	5

Segment	Stream	Town	Comment	Response	Letter
105001739	East Branch Farmington River	Barkhamsted	This stream segment does not exist and should not be classified. The original 2+ mile long East Branch stream channel between Saville Dam and Richard's Corner Dam no longer exists as a stream, as it is underwater, inundated by Barkhamsted Reservoir and Lake McDonough, and is not physically accessible;	Delete segment.	5
105000470	East Branch Farmington River	Barkhamsted	This stream segment does not exist and should not be classified.	Delete segment.	5
105002091	West Branch Farmington River	Hartland	This segment should be designated as Class 4. Flows and flow patterns in this segment are substantially altered, by human activity, upstream impoundments including, Goodwin Dam (West Branch Reservoir), Colebrook River Dam (Colebrook River Lake), and Otis Reservoir; "Future Water Supply with Investment" should be "YES" - Goodwin Dam, completed in 1960, impounds the 3 billion gallon West Branch Reservoir which was built for recreation, river flow management, riparian compensation and for potential future drinking water supply; "Other" - Hydroelectric Power Generation & Federal Wild & Scenic River Designation; "Fish Stocking" - The MDC stocks this segment with 1,700 trout annually	Add future water supply with significant investment, which changes the classification to a Class 3. This is a Trout Management Area that currently supports trout, so is not appropriate for a Class 4 designation. Add in 'other comments'.	5
105002102	West Branch Farmington River	Colebrook/ Hartland	Segment should be classified as Class 4 due to the substantially altered flows and flow patterns that have been maintained for over 50 years.	This segment is a Class 3 because it is a future water supply with significant investment. Insufficient documentation was provided to support a Class 4 designation.	5
105002159	West Branch Farmington River	Colebrook	This segment is not a stream, and as such should not be classified. It is part of Colebrook River Lake which is impounded by the US Army Corps of Engineers, Colebrook River Dam, and a smaller USACOE auxiliary dike.	Delete segment.	5

Segment	Stream	Town	Comment	Response	Letter
105002168	West Branch Farmington River	Colebrook	This segment is not a stream segment but rather dam outlet works from Colebrook River Lake directly into West Branch Reservoir. As dam outlet works, this segment is explicitly excluded from the definition of "river or stream segment" and therefore should not be classified.	Delete segment.	5
105001315	Phelps Brook	Burlington	This segment appears to be inaccurately depicted on CT DEEP's map of proposed classifications.	Delete segment.	5
105001372	Tributary to Nepaug	New Hartford	The section shown under Nepaug Reservoir does not physically exist as a stream and as such, should not be classified.	Delete section underneath the reservoir.	5
105001384	Nepaug River	New Hartford/ Canton	A significant portion of this stream segment is shown beneath Nepaug Reservoir. The section shown upstream from Nepaug Dam does not physically exist as a stream and as such, should not be classified; Segment should be classified as Class 4 due to the substantially altered flows and flow patterns that have been maintained for more than 100 years. "Protected Open Space" - Why is this a YES? MDC has no record of protected open space; "C&D Plan Growth Area" - Why is this a YES? MDC has no record of CT Plan of C&D Growth Area; "Identified by CT DPH" should be "YES" - Nepaug Reservoir is on CT DPH "High Quality Source" list; "Concerns with Margin of Safety" should be "YES" - MDC's Safe Yield and Margin of Safety would be significantly impacted if streamflow releases were required from Nepaug Dam;	Only the section of the stream segment below the reservoir is subject to classification under the regulations. Additional information regarding a Class 4 designation was requested and sufficient documentation was received to support a Class 4 designation for this segment. Change to Class 4, and modify extent of segment.	5

Segment	Stream	Town	Comment	Response	Letter
105001385	Nepaug River	Canton	Segment should be classified as Class 4 due to the substantially altered flows and flow patterns that have been maintained for more than 100 years. "C&D Plan Growth Area" - Why is this a YES? MDC has no record of CT Plan of C&D Growth Area; "Identified by CT DPH" should be "YES" - Nepaug Reservoir is on CT DPH "High Quality Source" list; "Concerns with Margin of Safety" should be "YES" - MDC's Safe Yield and Margin of Safety would be significantly impacted if streamflow releases were required from Nepaug Dam.	Insufficient information for consideration of a Class 4 for this segment was presented, and habitat conditions would be conducive to a Class 3 if water was available. Salmon and Trout have been reported in the lower reaches of this segment. A portion of this stream segment intersected with C&D growth area according to our data. However, this does not affect the classification because it is a class 3 below a PWS reservoir. The additional factor of DPH HQW list was added, but it doesn't change the classification. Low Margin of Safety off-ramps are detailed in RSCA Sec 26-141b-6.	5
106003132	West Hartford Reservoir 3	W Hartford	Segment should be classified as Class 4 due to the substantially altered flows and flow patterns.	No data is provided for consideration of a Class 4 for this segment.	5
106003136	West Hartford Reservoir 1	W Hartford	Segment should be classified as Class 4 due to the substantially altered flows and flow patterns.	No data is provided for consideration of a Class 4 for this segment.	5
106003147	Reservoir 2, Reservoir 5	W Hartford	Part of this stream segment is not downstream of Reservoir 2 or its dam; Segment should be classified as Class 4 due to the substantially altered flows and flow patterns.	Revise portion of segment above Reservoir #2 to Class 1. No data is provided for consideration of a Class 4 for this segment, so no change in response to that comment.	5
106003309	West Hartford Reservoir 6	Bloomfield/ W Hartford	Segment should be classified as Class 4 due to the substantially altered flows and flow patterns. "Identified by CT DPH" should be "YES" - Reservoir 6 is listed on CT DPH "High Quality Source" list	No data is provided for consideration of a Class 4 for this segment. The additional factor of DPH HQW list was added, but it doesn't change the classification.	5
		Old Lyme	Sound View, Old Lyme Shores, and Old Colony Beach communities are shown incorrectly on the map. Sheffield Brook is not shown, nor classified at all.	Noted. The base mapping utilized for this mapping is produced by the U.S. Geological Survey, not by the Department. We are therefore unable to update the base map, but will note it in our files. Sheffield Brook would be a Class 1, but is tidally influenced and would not be subject to any release requirements.	6

