



To: Connecticut Department of Energy and Environmental Protection
Bureau of Water Protection and Land Reuse, Planning and Standards Division

From: Elizabeth Gara, CWWA

Date: December 31, 2013

Re: **Proposed Stream Flow Classifications - Southeast Coastal, Pawcatuck and Thames
Major River Basins Classifications**

Thank you for the opportunity to comment on the state Department of Energy & Environmental Protection's (DEEP) proposed basin classifications.

BACKGROUND

In 2005, the Connecticut General Assembly adopted Public Act 05-142, which requires DEEP to work with the Department of Public Health (DPH) and stakeholders to update standards for maintaining minimum flows in rivers and streams. The act requires these standards to balance the various uses of water by providing for river and stream ecology, wildlife, and recreation, while providing for the needs and requirements of public health, flood control, industry, public utilities, water supply, public safety, agriculture and other lawful uses of water.

Although DEEP proposed updated Stream Flow Standards and Regulations in the fall of 2010, it was not until consensus was reached on several key points that the Regulations Review Committee agreed to move forward with adoption.

DEEP and stakeholders engaged in extensive negotiations to address various concerns. Chief among these concerns was the need to ensure that the regulations would not undermine the ability of public water suppliers to meet the current and future water supply needs of the state. As such, the regulations incorporated additional public water supply considerations, including protection for safe yield (the amount of water available to a water utility to serve customers) and protection for Margin of Safety (a measure of the reliability of the system).

The regulations were also revised to provide greater certainty to public water suppliers regarding how a river or stream would be classified by providing that any river or stream segment downstream from an impoundment, intersecting a Level A aquifer protection area, or identified

as a potential future source would not be considered a Class 1 or Class 2; providing certain exemptions from the regulations for small watersheds and certain man-made conveyances and a Class 4 designation to reflect rivers or streams whose flow has already been significantly altered by human activity. In addition, the regulations provide various compliance options to give public water suppliers greater flexibility and minimize the costs associated with compliance as well as added consideration for potential future water supplies.

This background is important in reviewing the proposed classifications to ensure that the classifications reflect the spirit and intent of the regulations. Accordingly, CWWA and its member utilities considered four issues: 1) Is the methodology used for classifications consistent with the regulations; 2) Are the classifications accurate; 3) Do the classifications make sense from a practical standpoint; and 4) How will the classifications impact future public water supplies and land use activities? These issues are discussed more fully, as follows:

I. IS THE METHODOLOGY USED TO CLASSIFY RIVERS AND STREAMS CONSISTENT WITH THE REGULATIONS?

Although we appreciate the complexity of developing a comprehensive basin classification system, CWWA is concerned that the methodology used to perform the basin classifications is not fully consistent with the regulations as adopted, as follows:

A. Automatic Class 3 Designation

DEEP's approach to stream classifications utilizes what is referred to as an "Automatic 3" designation for those instances where Factors (1), (2), or (14) are applicable. This approach is not consistent with the Stream Flows Standards and Regulations which direct that such stream segments shall not be classified as Class 1 or 2. In order to properly apply the regulatory language, all stream segments should be analyzed based upon all eighteen factors, after which the applicability of factors (1), (2), or (14) should be considered. This may result in a stream segment, which meets the criteria for Factors (1), (2) or (14), being classified as either a Class 3 or 4.

B. Hydrologic Stressor Index (HSI) Factors

The regulations identify 18 factors in determining classifications for a Class 1, 2, 3, or 4 stream segment. While the regulations do not suggest any relative weighting of the various factors, DEEP identifies four factors as the primary indicators of the degree of alteration of flow for any given stream segment. Each of the four factors is evaluated and assigned a metric value from 1 to 3 on the basis of the degree of alteration with a score of 3 representing the most altered condition. The total of the scores for the four factors is then utilized to assign an initial stream classification. However, the ranges for correlating total scores to stream classification do not allow for any stream to attain a Class 4 designation even when all four of the hydrologic factors are found to represent the maximum possible alteration. This appears inconsistent with the

narrative standard for Class 4 designation as a maximum score in each of the hydrologic factors would clearly be indicative of a substantially altered stream.

Factor (3) – *Size and location of permitted and registered diversions within the watershed:* DEEP has qualified this criterion by applying “active” to the requirement for consideration. However, the regulations require consideration of all permitted or registered diversions if operated to the maximum extent allowed. Therefore any diversions disqualified by virtue of being inactive should be factored into this analysis. For example, diversions are omitted along Swan Brook in Old Lyme, Pease Brook and Hoxie Brook in Lebanon, Quandon Brook in Killingly and Horse Brook/Fry Brook in Plainfield. However, diversions are considered along Stoud Brook in Thompson. This is inconsistent.

Factor (5) – *Size and location of return flows within the watershed:* DEEP has qualified this factor by only including municipal NPDES discharges. The regulations, however, do not include any such qualification nor is there any reason to conclude that municipal discharges affect flow any differently than any other return flow. All return flows in the watershed should be included in this analysis. Such flows should also be assessed relative to their overall impact on the hydrograph. For example, a return flow could augment base flow and mitigate certain other factors that would otherwise result in a more-altered classification.

Additionally, the inclusion of municipal NPDES discharges, as one of the four primary hydrologic stressors, may bias the classification process as it relates to drinking water supplies since in Connecticut no surface water supply for drinking water purposes will be located downstream from a wastewater treatment plant. Therefore, no stream segment utilized or considered for a future surface water supply could obtain more than the minimum score for this factor thus reducing hydrologic stressor index value and associated classification available for drinking water sources.

C. Application of Additional HIS Factors

DEEP used 10 of the remaining 11 additional factors to either raise or lower the initial stream classification by one step from the pre-classified level. This involved adding up the various site specific factors to determine whether the overall result was positive or negative, at which point the classification was adjusted, accordingly. However, this process simply provided an overall “increase” or “decrease”, resulting in a potential change in classification of one class, regardless of the number of factors present. For example, if there were more “increasers” than “decreasers”, the class was changed by one step, regardless if “increasers” exceeded “decreasers” by one or five. Moreover, 5 to 7 of those factors could result in a more strict classification (decreaser) but only 3 to 5 could cause a less strict classification (increaser).

There are concerns regarding the way the additional factors have been used in the classification process, as follows:

- **Factor (15)** – *River or stream segments that are identified by the Commissioner of Public Health pursuant to Section 59 of Public Act 11-242:* Although DEEP has indicated that the classifications will be updated to reflect additional sources from DPH’s High Quality Source list, it is important to note that not all segments included on the list are reflected in the classifications which were publicly noticed for comment. In considering this factor, DEEP has qualified it by only considering potential sources identified on DPH’s High Quality Source list. However, the regulations make no such distinction and therefore evaluation of this factor must also include consideration of all existing sources that are included on the DPH list.
- **Factor (7)** – *Planned land use in the upstream watershed:* DEEP has applied this factor by only considering locations where growth areas in the State Plan of Conservation and Development intersect with a stream segment. This application is contradictory to the regulations’ requirement to consider planned development in the upstream watershed. This factor was intended to consider the changes in impervious cover and associated impacts to flow characteristics associated with planned growth which would occur in the upstream watersheds contributing to any given stream segment. The simple intersection with a growth area does not reflect the full impacts in the upstream watershed.
- **Factor (17)** – *Impact of stream classification on a community water supply’s margin of safety:* DEEP has acknowledged that this factor has not been utilized due to a lack of information. For the impacted water supply system the ability to accurately assess the impact of stream classification cannot be accomplished until the classification has been determined. The subsequent process to calculate the system’s revised safe yield and associated margin of safety is both time-consuming and expensive. The ninety-day comment period does not afford sufficient time for this analysis to be completed prior to the close of the comment period. DEEP should establish an extended time frame for submittal of information by a water supply system specific to this factor to be considered prior to the final adoption of the stream classifications.
- **Factor (18)** – *Any other factor indicative of the degree of human alteration of natural stream flow:* Use of this factor has been inconsistent with respect to its weighting. While it appears that it has generally been utilized to increase the stream classification, the inconsistency with which it has been applied is of concern as it seems to function as a wild card which can supersede the other classification criteria.
- **Factor (14)** - *Significant Investment:* The proposed classifications consider that a significant investment has been made in a potential supply source if the source is listed

as proposed for use within the 5 year plan of an approved Water Supply Plan. We understand that this surrogate method is a way to infer significant investment without requiring additional information from the water supplier and review by the department. However, public water suppliers generally don't indicate in a Water Supply Plan whether or not a significant investment has been made because this information is not considered in the plan. In addition, DEEP has assumed for purposes of the classifications that if there is a future supply source beyond the 5 year plan, that a significant investment has not been made.

D. Existing Supplies

Factor 3 of the Regulations requires consideration be given to “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”. Therefore, any existing permitted or registered supply, including inactive, emergency, bedrock or stratified drift, must be considered at its maximum extent allowed, regardless of the mapping standards. Once evaluated in accordance with the 18 factors, the classification of any associated river or stream segment should not be a 1 or a 2.

Certainly, the area of influence of public water supply wells mapped to Level B standards should be strongly considered for Class 3 or 4 designations where Level A Mapping is not yet complete. Examples include Killingly, Thompson and Plainfield. At a minimum, these wells should be identified as de facto potential sources of water supply for which a significant investment has been made, similar to emergency supplies. As with emergency supplies, the classification of any associated river or stream segment should not be a 1 or a 2.

II. ARE THE CLASSIFICATIONS ACCURATE?

The GIS system used to classify rivers and streams places a significant burden on municipalities, planning agencies and water companies to determine whether the rivers and streams have been classified appropriately. Under the system developed by DEEP, the public bears the burden of identifying errors and providing DEEP with additional information or considerations that may necessitate changes to the classification.

Given the complexity of the data, the number of stream segments involved, and the GIS mapping system, this is an extremely cumbersome process. We are concerned that many smaller communities and water systems in this area lack the time and expertise to determine whether the classifications are accurate within the time frame provided. If inaccuracies are not identified at

this stage, the only recourse available is to petition for a change in classification, which is a time-consuming and uncertain process.

We believe DEEP should perform a greater “boots to the ground” evaluation to ensure that the classifications are accurate and properly reflect the degree of stream flow alteration, including reaching out to those that can help supply accurate data and information. Even a cursory review of the data should disclose that, in some cases, the classifications are not accurate. For example, the Shetucket River in North Franklin/South Windham area is classified as a 1. Under the regulations as adopted, Class 1 is defined as a Free-Flowing Stream which exhibits, at all times, the depth, volume, velocity and variation of stream flow and water levels necessary to support and maintain habitat conditions supportive of an aquatic, biological community characteristic of that typically present in a free-flowing river or stream system. Clearly, however, this river segment is significantly altered by human activity and should be classified as a 3 or 4.

III. DO THE PROPOSED CLASSIFICATIONS MAKE SENSE FROM A PRACTICAL STANDPOINT?

A. Individual Classifications

There are instances where the individual classifications do not always make sense for the river or stream. For example, as indicated, the Shetucket River Basin provides public water supply and hydropower in many locations. However, the classification abruptly changes from 3 to 1 in Windham and then does not revert back to 3 until the Occum Dam. We believe the entire Shetucket River should be considered a Class 3, consistent with the narrative standards.

B. Adjacent Streams Comparison

In addition, the relative classifications do not always make sense when adjacent streams are compared. Swan Brook in Old Lyme, which is a Class 1, lies between Mile Creek (class 3) and Armstrong Brook (class 3). Swan Brook flows through an area with permitted public water supply wells and a more densely developed residential area than either Mile Creek or Armstrong Brook. Additionally, sections of the Swan Brook channel are physically altered by channelization and more culverts than the nearby streams. Yet Swan Brook is Class 1 and the others are Class 3.

C. Tributary Streams

Classifications do not always reflect the classifications of tributary streams joining the main stem. In one section, the Yantic River is class 3. The next section of the Yantic River is joined by streams of class 2 and 3 and this section of the Yantic River reverts back to a Class 1. In other words, Class 2 and 3 streams flowing into a class 3 stream have caused the main stem to be Class 1. This seems improbable, at best. If altered streams join together, the result must be an altered stream.

IV. HOW WILL THE CLASSIFICATIONS IMPACT FUTURE PUBLIC WATER SUPPLIES AND LAND USE ACTIVITIES?

Given the significance of how a river or stream is classified, it is important to consider how the classifications may impact the development and use of future public water supplies as well as land use activities. Inasmuch as 97% of the river and stream segments in this basin are classified as free flowing or minimally altered (Class 1 or 2), will this help preserve these rivers and stream for future beneficial use or will it impede economic development, public water supply development, and other land use activities? This uncertainty raises concerns about whether the classifications will achieve the balance sought by the negotiated regulations.

Clarifying how the classifications may impact future public water supplies and land use activities – as well as the state’s overall economic goals - is vital to determining whether the proposed classifications are consistent with the regulations which are intended to achieve a balanced approach to regulating stream flow that will protect the state’s aquatic habitats and ensure public water supplies to meet the public health, safety, agricultural and industrial needs of the state.

CONCLUSION

CWWA is committed to working with DEEP to ensure that the classifications are developed consistent with the spirit and intent of the regulations. However, considering the breadth and significance of the issues raised above, we respectfully urge DEEP to take additional time to obtain further input from interested stakeholders to ensure that the issues raised concerning the methodology and its application have been resolved prior to finalizing the stream flow classifications in the Southeast Coastal, Pawcatuck, and Thames River Basins.

Accordingly, CWWA recommends that the comment period be extended to 180 days to provide interested parties with sufficient time to do this complex review. In addition, we strongly urge that these comments be considered as the Department moves forward with the remaining basin classifications.

Thank you for the opportunity to comment.

The Connecticut Water Works Association, Inc. (CWWA) is an association of private, municipal and regional public water supply utilities serving more than 500,000 customers, or population of about 2½ million people, located throughout Connecticut.

CWWA
1245 Farmington Ave., 103
West Hartford, CT 06107
Tel. 860-841-7350
www.cwwa.org