

**South Central Connecticut Regional Water Authority**  
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<http://www.rwater.com>

August 19, 2015

Mr. Robert Hust  
Bureau of Water Protection and Land Reuse  
Department of Energy and Environmental Protection  
79 Elm Street  
Hartford, CT 06106-5127

Re: Proposed Stream classifications for the South Central Coastal Basin

Dear Mr. Hust,

The Regional Water Authority (RWA) has reviewed the stream classifications for the South Central Coastal Basin of Connecticut proposed by the Connecticut Department of Energy and Environmental Protection on May 15<sup>th</sup>, 2015. The RWA provides approximately 46 million gallons per day of drinking water to some 430,000 consumers in our region. The source of this water is a system of watershed and aquifer areas that cover about 120 square miles within 24 municipalities, the vast majority of which are in the South Central Coastal Basin. The RWA has a long history of caring for natural environments and fully recognizes that the way we manage our system is integral to protecting the quality of our region's ecosystems.

In November 2014, we submitted to your office a list of potential sources of water supply in the RWA's Water Supply Plan, with corresponding information for each as to where a *significant investment* has been made as described in Sec. 26-141b-5(14) RCSA. By regulation, streams associated with potential sources meeting the criteria of *significant investment* cannot be classified as Class 1 or 2. This listing included several potential surface water sources and three potential wellfields with corresponding maps showing the Level B mapped Area of Contribution (AOC) for each. Since that time we retained the services of LBG, Inc. to conduct numerical modeling of the three potential wellfields to more accurately delineate their AOCs, a report of which has been submitted to the Department.

We carefully examined the proposed classifications for stream segments in this basin associated with RWA existing public water supply sources registered or permitted in accordance with Sec. 22a-377 of the Connecticut General Statutes, and potential sources with significant investment. Our comments are shown in two tables. Table 1 lists our comments concerning stream segment classifications associated with registered or permitted diversions. Table 2 lists our comments on the classifications for the potential sources identified in the RWA's Water Supply Plan, and reflect the new modeling information discussed above concerning AOCs for potential groundwater sources. In addition we have attached Exhibit A, which provides supporting information for our comments in Table 1 pertaining to recommended Class 4 designations for two stream segments in our water system.

**Table 1. Comments: Stream Segments Associated with Registered or Permitted Diversions**

Comment Number	Stream Segment(s)	Comment
1.1	104001305	1) Segment 104001305 downstream of an RWA reservoir in North Branford is proposed to be classified as "Automatic 3". Although the classification is in accordance with the regulation, the location of the segment needs to be adjusted. Proceeding from about 1,520 feet from the southern end of the segment, it is shown bending to the east and proceeding approximately another 3,000 feet to the dam. The actual stream channel, however, proceeds northward from where the bend begins to the existing waterworks for making water releases as evidenced by the topographic contours. The eastern 3,000 +/- foot section shown after the eastward bend is actually a spillway overflow channel that is dry except during typically infrequent occasions when the reservoir is spilling. This section of the segment is not a stream and should not be classified.
1.2	104000560	Segment 104000560 is downstream of a diversion dam on the Farm River in Northford and is misclassified as Class 2. By regulation, the classification immediately downstream of the dam should be changed to "Automatic 3" or Class 4.
1.3	104000644	Segment 104000644 is downstream of a diversion dam on an unnamed watercourse in Northford and is misclassified as Class 1. By regulation, the classification should be changed to "Automatic 3" or Class 4.
1.4	104000763	Segment 104000763 downstream of a diversion dam on Gulf Brook is misclassified as Class 1. By regulation, the classification immediately downstream of the dam should be changed to "Automatic 3" or Class 4.
1.5	104000995	Segment 104000995 is downstream of a diversion dam on Little Meadow Brook in Guilford and is misclassified as Class 1. By regulation, the classification immediately downstream of the dam should be changed to "Automatic 3" or Class 4.
1.6	104001480, 104001646	1) Segment 104001480 is downstream of a diversion dam on the Farm River in East Haven and is misclassified as Class 2. By regulation, the classification immediately downstream of the dam should be changed to "Automatic 3" or Class 4; 2) Segment 104001646 is an underground aqueduct and is classified as Class 1. This is not a stream and should not be classified.
1.7	104000784	A portion of segment 104000784 lies between two reservoirs in Woodbridge and has a proposed classification of "Automatic 3". We recommend that this segment be designated as Class 4. See Exhibit A for a detailed justification.

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Comment Number	Stream Segment(s)	Comment
1.8	104001687, 104001546, 104001576, 104001556	<p>1) A portion of Segment 104001687 immediately adjacent to a reservoir in West Haven is proposed as "Automatic 3". This segment is bisected by a watershed divide that is not apparent on the map topographic contours. The segment portion immediately adjacent to the reservoir is tributary to the reservoir. Therefore this segment is not subject to an "automatic" designation and should be reclassified in accordance with DEEP's methodology; 2) Segment 104001546 is immediately downstream of the dam and spillway location for the terminal reservoir of a three reservoir system, is misclassified as Class 2, and by regulation should be reclassified as "Automatic 3" or Class 4. This segment is within and part of a larger manmade underground stormwater conveyance system. We recommend that this segment be designated as Class 4. See Exhibit A for a detailed justification; 3) The portions of Segments 104001576 and 104001556 that lie between reservoirs in this three reservoir system are manmade spillway conveyance channels that carry reservoir overflows to the aforementioned terminal reservoir. These segment portions should not be classified as they are not streams.</p>
1.9	104001754	<p>A small dam in combination with a network of ditches, pipes, and other structures is designed to divert water from Segment 104001754 in Orange (Trout Brook) into an underground aqueduct that diverts water to a reservoir system in West Haven. This segment is proposed as Class 2. By regulation, this segment should be reclassified as "Automatic 3" or Class 4.</p>
1.10	104000274, 104000265	<p>A portion of Segment 104000274 is immediately downstream of a reservoir for a two reservoir system in Prospect. It is misclassified as Class 2. By regulation, this segment should be reclassified as Class 3 or 4. In addition, prior to 1981 this portion of the segment was relocated and the location is no longer as shown on the classifications map. Rather than flowing to the terminal reservoir in the system, it merges with Segment 104000265 north and downstream of the terminal reservoir.</p>

**Table 2. Comments: Stream Segments Associated with Potential Sources with Significant Investment**

Comment Number	Stream Segment(s)	Comment
2.1	104001078, 104001110, 104001111, 104001149	DEEP proposed an "Automatic 3" designation to Segment 104001078 adjacent to a potential groundwater source in Hamden. A description of significant investments and recent numerical modeling of the AOC, both submitted to the Department, also supports by regulation an "Automatic 3" or Class 4 designation for the following additional segments: 104001110, 104001111, and 104001149.
2.2	104000726, 104000657, 104000793, 104000856	DEEP proposed an "Automatic 3" designation to Segment 104000726 adjacent to a potential groundwater source in North Haven. A description of significant investments and recent numerical modeling of the AOC, both submitted to the Department, supports by regulation an "Automatic 3" or Class 4 designation for the following additional segments: 104000657, 104000793, and 104000856.
2.3	104000727, 104000644, 104000645, 104000677, 104000678, 104000682, 104000685, 104000763, 104001005	DEEP proposed an "Automatic 3" designation to Segment 104000727 adjacent to a potential groundwater source in North Branford. A description of significant investments and recent numerical modeling of the AOC, both submitted to the Department, also supports by regulation an "Automatic 3" or Class 4 designation for the following additional segments: 104000644, 104000645, 104000677, 104000678, 104000682, 104000685, 104000763, and 104001005.
2.4	104001047	Segment 104001047, immediately downstream segment from a potential diversion in Madison, was proposed as Class 2. Based on a description of significant investments submitted to the Department, by regulation this segment associated with a potential public water supply source should be reclassified as an "Automatic 3" or Class 4.
2.5	104000854, 104001082	The RWA's Water Supply Plan shows the location of this potential diversion in Madison to at segment 104000854, just prior to its intersection with the immediate downstream segment 104001082. Segment 104000854 is proposed as Class 1 and Segment 104001082 is proposed as Class 2. Based on a description of significant investments submitted to the Department, by regulation both these segments associated with a potential public water supply source should be reclassified as an "Automatic 3" or Class 4.

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Please let me know if we can be of assistance in answering questions or providing additional information on specific details of rivers and streams within the RWA's water system. We would be happy to provide tours of specific water system locations to CT DEEP staff if it would be helpful.

Thank you for your consideration of our comments. If you have any questions, please contact me at 203-401-2733 or [jhudak@rwater.com](mailto:jhudak@rwater.com).

Sincerely,



Environmental Planning Manager

cc. Ellen Blaschinski, CT DPH  
Lori Mathieu, CT DPH  
Ted Norris, RWA

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**EXHIBIT A – JUSTIFICATIONS FOR CLASS 4 STREAM SEGMENTS**

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**Justification for Class 4 Designation: Stream Segment 104000784**

Class 4 Narrative Standard	Stream Segment 104000784
Exhibits substantially altered stream flow condition caused by human activity while giving consideration to societal needs, economic costs, and environmental impacts	The length of the segment before merging with the downstream reservoir is approximately 750 ft in length. It lies between two reservoirs in series in the West River system. The segment serves as a spillway channel and only receives substantive flows when the upstream reservoir is spilling or being intentionally lowered for dam maintenance.
Extent of prior channel modification	The channel is substantially altered with about 90 feet (12%) consisting of a concrete channel, 85 ft (11%) being a steeply sloped bedrock waterfall, and 65 ft (9%) of natural channel that is dry when the reservoir is not spilling. The remaining 510 feet (68%) is close to the elevation of the downstream reservoir and is frequently wet due to backflow from the reservoir. The stream terminates at a concrete apron and bridge that crosses under Route 69 before entering the downstream reservoir.
Current Impact of development and impervious cover in the watershed	Not applicable
Overriding societal needs that cannot otherwise be met	Not applicable
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	Any capital expenditures and operating expenses needed to comply with the regulation concerning this segment would not have a commensurate environmental benefit.
Associated environmental impacts to other river or stream segments	There will be no environmental impacts to other river or stream segments. Water will be released from the terminal reservoir in the system to its immediate downstream segment as required.
Existing biological community	Although a biological survey has not been conducted, the existing biological community is likely to consist of transient inhabitants associated with the downstream reservoir. The combination of manmade structures and limited natural habitat, along with highly variable flows are not suited to supporting a moderately altered biological community, as described in the Class 3 narrative standard. The segment exhibits "substantially altered stream flow conditions altered by human activity..." as described in the Class 4 narrative standard.
Margin of safety of the community water system utilizing the river or stream segment as an existing water supply source	Not applicable

**Justification for Class 4 Designation: Stream Segment 104001546**

Class 4 Narrative Standard	Stream Segment 104001546
Exhibits substantially altered stream flow condition caused by human activity while giving consideration to societal needs, economic costs, and environmental impacts	The segment is immediately downstream of a dam for the terminal reservoir of a three reservoir public water supply source. In the proposed stream classifications, the segment is misclassified as Class 2. The segment and its surrounding environment have been greatly altered by urban development.
Extent of prior channel modification	The segment receives overflows and/or reservoir blowoff discharges via the dam waterworks. Water is directed to the segment via a manmade spillway channel and/or blowoff pipe. From the dam spillway, the segment as it exists today flows underground and crosses under Route 34, flowing approximately 370 feet before daylighting on the south side of Route 34. The watercourse is above-ground for another 370 feet before again submerging beneath the extensive urban development in the downstream area. The exact location of reemergence is unknown, but water from this segment will ultimately discharge to the tidal West River estuary approximately 2 miles from New Haven Harbor.
Current Impact of development and impervious cover in the watershed	The segment is heavily impacted by development and impervious cover. In addition to spillway overflow, it receives stormwater discharges from Route 34.
Overriding societal needs that cannot otherwise be met	Since most of the associated stream system including and downstream of this segment has been diverted underground, full restoration of the stream segment and system to conditions described in the Class 3 narrative standard would involve great disruption to infrastructure and overlying development on public and private properties.
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	Daylighting and restoration of the associated stream system to conditions described in the Class 3 narrative standard would be expected to be highly costly and disruptive to the existing overlying development, including storm sewers, infrastructure and utilities, businesses, residential properties, and a large cemetery.
Associated environmental impacts to other river or stream segments	There would be no measureable impacts to other river or stream segments, as the vast majority of the stream system downstream of the segment lies underground beneath urbanized land cover. It provides only a de minimis freshwater flow contribution to the tidal West River Estuary.



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Class 4 Narrative Standard	Stream Segment 104001546
Existing biological community	Unknown but given the surrounding habitat alteration and urbanization, and a less than 400 foot portion of the segment being above ground, it is unlikely that that this segment would support the moderately altered biological community described in the Class 3 narrative standard. Given that the vast majority of the stream system downstream of the segment is piped underground there is virtually no biological connectivity with the West River estuary, which is approximately 1-mile linear distance from the segment. The segment exhibits "substantially altered stream flow conditions altered by human activity..." as described in the Class 4 narrative standard.
Margin of safety of the community water system utilizing the river or stream segment as an existing water supply source	Not applicable

