



June 1, 2022

BY EMAIL

United States Army Corps of Engineers
Nashville District
Estes Kefauver Federal Building & Courthouse Annex
801 Broadway
Nashville, TN 37203

Attn: Cody A. Flatt, Cody.A.Flatt@usace.army.mil.

Re: Center Hill Dam and Reservoir Water Control
Manual; May 4, 2022, Public Notice

Gentlepersons:

Harpeth Conservancy (“HC”) would like to take this opportunity to comment on the Center Hill Dam and Reservoir Water Control Manual (the “Manual”),¹ and we thank you for the opportunity to do so.

HC is a science-based conservation organization dedicated to clean water and healthy ecosystems for rivers in Tennessee. Since 1999, the Harpeth Conservancy's mission is to restore and protect clean water and healthy ecosystems for rivers in Tennessee. We employ scientific expertise and collaborative relationships to develop, promote and support broad community stewardship and action. HC’s members live around the Center Hill Dam and the Caney Fork River and recreate in them.

HC believes that a number of improvements to the original 1998 Manual are required to comply with the US Army Corps of Engineers’ (“USACE”) responsibilities under the federal Clean Water Act (“CWA”)², as well as the Tennessee Water Quality Control Act (“TNWQCA”).³ Changes are also required because water quality conditions in the Caney Fork River downstream of the Center Hill Dam have not improved, if they have not actually deteriorated in the period since the 1998 Manual.

¹ <https://www.lrn.usace.army.mil/Media/Public-Notices/Article/3018969/corps-seeks-public-input-for-revision-of-center-hill-dam-and-reservoir-water-co/>.

² 33 USC. § 1251 *et seq.*

³ TN Code Annotated § 69-3-101 *et seq.*

SCIENCE-BASED CONSERVATION FOR THE RIVERS OF TENNESSEE

Harpeth Conservancy is a Tennessee non-profit corporation and a 501(c)(3) organization.

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Under the CWA, the State of Tennessee is required to establish water quality standards (“WQS”),⁴ and, every two (2) years, to assess whether the waters of the State meet those criteria. Waters that do not meet the WQS are considered “impaired” (not meeting designated uses) and placed on the State’s “303(d) list.”⁵

The 6.4 mile segment of the Caney Fork River below the Center Hill Dam is considered impaired and is on Tennessee’s 303(d) list, for the following reasons:⁶

TN05130108012_1000	Caney Fork River	DISSOLVED OXYGEN
TN05130108012_1000	Caney Fork River	FLOW REGIME MODIFICATION
TN05130108012_1000	Caney Fork River	TEMPERATURE

Conditions in the Caney Fork River thus require action under the CWA and the TNWQCA on several grounds.

First, under TN’s WQS for fish and aquatic life, the USACE is required to maintain dissolved oxygen (“DO”) levels of at least 6.0 mg/L:

(3) The criteria for the use of Fish and Aquatic Life are the following.

(a) Dissolved Oxygen - The dissolved oxygen shall not be less than 5.0 mg/l with the following exceptions.

1. In streams identified as trout streams, including tailwaters, dissolved oxygen shall not be less than 6.0 mg/L.

...

Substantial and/or frequent variations in dissolved oxygen levels, including diel fluctuations, are undesirable if caused by man-induced conditions. Diel fluctuations in wadeable streams shall not be substantially different than the fluctuations noted in reference streams in that region.⁷

Second, current conditions in the Caney Fork River violate CWA and TNWQCA provisions regulating the temperature of allowable discharges.

The CWA regulates the temperature of allowable discharges under the same regulatory regime as other discharges. Section 303(d) of the CWA⁸ provides that:

⁴ 33 USC § 1313(d).

⁵ See <https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html>.

⁶ <https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/water-quality-reports---publications.html>.

⁷ TN. Comp. R. & Regs., Rule 0400-40-03-.03 Criteria for water uses (emphasis added).

⁸ 33 USC § 1313: Water quality standards and implementation plans.

(d) Identification of areas with insufficient controls; maximum daily load; certain effluent limitations revision

(1)(B) Each State shall identify those waters or parts thereof within its boundaries for which controls on thermal discharges under section 1311 of this title are not stringent enough to assure protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.

...

(D) Each State shall estimate for the waters identified in paragraph (1)(B) of this subsection the total maximum daily thermal load required to assure protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife. Such estimates shall take into account the normal water temperatures, flow rates, seasonal variations, existing sources of heat input, and the dissipative capacity of the identified waters or parts thereof. Such estimates shall include a calculation of the maximum heat input that can be made into each such part and shall include a margin of safety which takes into account any lack of knowledge concerning the development of thermal water quality criteria for such protection and propagation in the identified waters or parts thereof.

...

(3) For the specific purpose of developing information, each State shall identify all waters within its boundaries which it has not identified under paragraph (1)(A) and (1)(B) of this subsection and estimate for such waters the total maximum daily load with seasonal variations and margins of safety, for those pollutants which the Administrator identifies under section 1314(a)(2) of this title as suitable for such calculation and for thermal discharges, at a level that would assure protection and propagation of a balanced indigenous population of fish, shellfish, and wildlife.

Indeed, section 303(h) of the CWA provides that “[f]or the purposes of this chapter the term ‘water quality standards’ includes thermal water quality standards.”⁹

Tennessee’s WQS for both fish and aquatic life and recreation regulate water temperature. The criteria for fish and aquatic life provide that:

(e) Temperature - The maximum water temperature change shall not exceed 3°C relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2°C per hour. The temperature of recognized trout waters shall not exceed 20°C. There shall be no abnormal temperature changes that may affect aquatic life unless caused by natural conditions. The temperature in flowing streams shall be measured at mid-depth.

...

⁹ 33 USC § 1313(h).

A successful demonstration as determined by the Department conducted for thermal discharge limitations under Section 316(a) of the Clean Water Act, (33 U.S.C. § 1326), shall constitute compliance with this paragraph.¹⁰

The criteria for recreational use are similar:

(e) Temperature - The maximum water temperature change shall not exceed 3°C relative to an upstream control point. The temperature of the water shall not exceed 30.5°C and the maximum rate of change shall not exceed 2°C per hour. The temperature of impoundments where stratification occurs will be measured at a depth of five feet, or mid- depth whichever is less, and the temperature in flowing streams shall be measured at mid-depth.¹¹

Third, TN's WQS for recreation contain a specific requirement for maintenance of flows:

(m) Flow - Stream flows shall support recreational uses.¹²

Fourth, conditions in the Caney Fork River continue to deteriorate. Not only are there areas of the river where changes in flows have left large areas “high and dry” but changes in temperature and DO levels have significantly degraded the fishery. These changes are well-known. As another conservation organization puts it:

Some of you undoubtedly have fond memories of incredible fishing on the Caney in years past. However, over the last few years the increase in water temps and decrease in dissolved oxygen levels have had an adverse effect on fish habitat. We have seen a decrease in catch rates and an increase in fish mortality in later summer months.¹³

Therefore, HC supports changes to the Manual to ensure compliance with the CWA and TNWQCA. To maintain consistent ecological flows for the health of the Caney Fork river, its fishery, and for quality recreation, the USACE should revise the Manual to do at least the following:

1. Utilize existing infrastructure and operations to maintain DO levels of at least 6 mg/L DO, and water temperatures that support a cold-water fishery, and to maintain greater a wetted area during all operations.
2. Maintain 200-500 cfs using the dam's orifice and sluice gates. This includes maintaining a true minimum flow that will provide continuous benefits to the upper reach of the river, while also providing more consistent flows and temperatures for the benefit of the lower river.

¹⁰ TN Comp. R. & Regs., Rule 0400-40-03-.03 (3)(e).

¹¹ TN Comp. R. & Regs., Rule 0400-40-03-.03 (4)(e).

¹² TN Comp. R. & Regs., Rule 0400-40-03-.03 (4)(m).

¹³ <https://www.musiccitytu.com/latest-news/2022/5/20/caney-forknbspwater-control-manual-update>.

3. Strive for true, consistent flows, water temperatures, and dissolved oxygen requirements that ideally go beyond the minimum thresholds.
4. Revisit hydropower ramping rates to best address recreational use and safety, in addition to river health. The 1998 Manual references that changes in generation are not exceed 2 units/hour. Hydropower changes should be limited to changes of no more than one unit per hour (up or down). More frequent variations in generation, including going quickly from periods of no generation to the operation of two units creates unsafe conditions for recreational fishing and boating, and degrades habitat in the river.
5. Complete at least an Environmental Assessment (EA), given the complexity the situation at Center Hill Dam/Caney Fork.

In summary, conditions in the Caney Fork River downstream of the Center Hill Dam are such that the river does not meet designated uses under either the CWA or the TNWQCA. Changes in operations are required to make sure that WQS for DO and temperature are met. Changes in the Manual at least as protective of the river as outlined above are required to bring the Center Hill Dam into compliance with its legal obligations. We support such changes to the Manual and look forward to working with the USACE to assure their implementation.

Sincerely yours,

Harpeth Conservancy



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