



## HARPETH RIVER WATERSHED ASSOCIATION

*"Protecting the State Scenic Harpeth River and Clean Water in Tennessee Since 1999"*

July 25, 2016

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Mark S. Hilty, P.E.  
Director  
City of Franklin  
Water Management Department  
124 Lumber Drive  
Franklin, Tennessee 37064

Re: Application of City of Franklin, Tennessee for two Clean Water State Revolving Loan Fund Loans Totaling \$45,000,000 for its Wastewater Treatment Plant and Biosolids Improvements Projects (\$225,000 -- principal forgiveness; \$43,500,000 -- no principal forgiveness)

Dear Mr. Hilty:

On behalf of the Harpeth River Watershed Association ("HRWA") and its members, we appreciate the opportunity to offer comments at the public meeting for these projects on July 14, 2016 and to supplement those comments in writing.

Founded in 1999, HRWA is a 501(c)(3) not-for-profit, science-based conservation organization dedicated to protecting the State Scenic Harpeth River and clean water in Tennessee. The Harpeth is among the unique freshwater river systems of the Southeast which contain one of the greatest variety of aquatic life in the world. To affect change, HRWA collaborates with landowners, businesses, community, local, state, and federal decision makers and others to put solutions in place to maintain healthy landscapes, reduce pollution, and implement restoration in order to achieve water quality standards set to protect public health and wildlife. The 125 mile-long State Scenic Harpeth River and over 1,000 miles of tributaries flow through both rural landscapes and rapidly developing urban and suburban areas of the greater Nashville region, one of the fastest growing regions of the country.

HRWA and its members believe that a healthy river is important for human health in the area as well to the economic vitality of the region. A healthy river is an important attractant for people and companies who want to locate in an area such as Franklin, and who want to recreate and spend their time and money in Franklin and the entire region.

HRWA has a long history of working for clean water in the Harpeth River and of collaborating with the City of Franklin ("Franklin") to try to achieve that goal. Indeed, in 2005, Franklin's Board of Mayor and Aldermen passed resolution recognizing our expertise and encouraging City departments to work closely with HRWA. A copy of that resolution is appended as Attachment A to these comments.

HRWA has also worked consistently over the years to improve the Harpeth River for the benefit of Franklin and its residents. For example, HWRA managed the multi-agency collaboration and the large federal grant for the Lowhead Dam removal project in 2012, which won state and national awards for Franklin. We have also installed a number of canoe access points over the years. In 2015, HRWA engaged volunteers who contributed 1,000 hours in river cleanups, reforestation, stabilization, and water monitoring.

As you are undoubtedly aware, the federal Clean Water Act, 33 U.S.C. §1251 *et seq.* (the “CWA”), prohibits the discharge of pollutants into rivers except pursuant to a permit, 33 U.S.C. § 1311(a). Section 303(d), 33 U.S. Code § 1313(d), of the CWA requires states to identify streams that are “water quality limited,” i.e., that do not meet water quality standards and need additional pollution controls.

The Harpeth River, for 72 miles of its main stem, including the segment that runs by and downstream of Franklin’s wastewater treatment plant and through downtown Franklin, is impaired and does not meet water quality standards. This segment of the Harpeth is impaired for phosphorus and low dissolved oxygen due to “municipal point sources.” TDEC, Final Version Year 2014 303(D) List, May, 2016, p. 34 *et seq.* (available at <https://www.tn.gov/assets/entities/environment/attachments/2014-final-303d-list.pdf>; the “2104 303(d) list”.)

Franklin’s wastewater treatment plant is the largest by far of the three (3) sewer plants that discharge into the Harpeth. Based on Franklin’s monthly operating reports and current allowable permit conditions, the river -- downstream from Franklin through northern Williamson County -- can consist of between 35% and 50% treated sewage, and of up to over 90% of treated sewage in extreme summer low flow conditions.

Quoting from a report by the Tennessee Department of Environment & Conservation (“TDEC”): If a stream is impaired “[and] has been placed on the 303(d) List [as has this portion of the Harpeth], it is considered a priority for water quality improvement efforts. These efforts include traditional regulatory approaches such as permit issuance and enforcement.... [and] [TDEC] cannot authorize additional loadings of the same pollutant(s). It may mean that dischargers will not be allowed to expand or locate on 303(d) listed streams until the sources of pollution have been controlled.” 2014 303(d) list, at p. 5 (emphasis added.)

Before Franklin can obtain money from the State Revolving Loan Fund (SRF), it must obtain a least a draft permit for the expansion of its wastewater treatment plant to 16MGD. Although we are in the process of working hard with Franklin so that a new permit can be issued and that permit improves conditions in the river so that the river can meet water quality standards, no such draft permit has yet been issued.

According to Tennessee’s Clean Water SRF-Planning Requirements Inter-Disciplinary Environmental (IER) Review, Facilities Plan Guidance Document (“FPGD”) (available at [https://www.tn.gov/assets/entities/environment/attachments/srf\\_cwf\\_facilities-planning-req-and-guide.pdf](https://www.tn.gov/assets/entities/environment/attachments/srf_cwf_facilities-planning-req-and-guide.pdf)), an application must:

Describe the study purpose and need for the project and present proof that the proposed project is warranted and needed to improve the public health, reduce pollution to restore surface and ground water, enhance the environmental condition of the planning area, or expand

or upgrade the facilities based on the projected, reasonable growth of expected flows. Examples of this proof include: **copies of regulatory directives for existing facilities**, i.e., NPDES Permit requirements, court or enforcement orders; a copy of TDEC, Division of Water Resources' **Tier Evaluation** confirming that the receiving stream is a Tier I stream; and/or a copy of TDEC, Division of Water Resources' **draft Permit and transmittal letter; field reports, photographs, work orders**, etc. (¶2. Purpose and Need; emphasis in original.)

No such draft permit for the 16MGD expansion yet exists, and the SRF must condition its approval of the loans on the issuance and receipt of that draft permit. (Further, the loans may not be approved and funded until all other requirements of the FPGD and all requirements of state and federal law have been fulfilled.)

(We also note that HRWA recently settled its federal CWA citizen suit against Franklin. That settlement agreement, which is enforceable in US District Court, is a "court or enforcement order" which must be submitted to the SRF and contains terms important to consideration of the draft permit and the requested loans, is appended as Attachment B. The settlement agreement is pending approval by the Court.)

Because the draft permit for the expansion to 16MGD has not yet issued, we believe it is very important that Franklin and the SRF understand what that draft permit must contain.

Among the most significant conditions the new draft permit must include are:

- 1) Meaningful concentration limits for phosphorus. Current concentration limits are too high, and should not be eliminated or loosened, but should more closely resemble concentrations in the river near and upstream of the plant until such time as updated limits derived from the new pollution reduction plan (a Total Maximum Daily Load or ("TMDL") for the Harpeth River can be developed (see [http://www.harpethriver.org/resources/sm\\_files/070615%20TDEC%20Franklin%20HRWA%20ARAP%20final%20press%20release.pdf](http://www.harpethriver.org/resources/sm_files/070615%20TDEC%20Franklin%20HRWA%20ARAP%20final%20press%20release.pdf) (new TMDL announced in 2015) ).

HRWA asked Dr. Clifford Randall, a noted national expert, to review and evaluate conditions in the Harpeth. Dr. Randall's report is appended to this letter as Attachment C (the "Randall Report"), and he concluded as follows:

6. The phosphorus in the effluent of the COF STP [City of Franklin Sewage Treatment Plant] is a major fraction of the phosphorus entering the Harpeth River during the summer growing season, and it thoroughly dominates the mass of phosphorus entering the River during the very low background flows that typically occur in the late summer and early fall of each year. It is crucially important that the STP effluent phosphorus be reduced to very low concentration (less than 0.15 mg/L) during that period of time. Virtually all of the phosphorus that enters the River during the low flow periods will be used primarily to support algae growth, except in wetland areas. (Randall Report, p. 20 of 35 (emphasis added)).

**We urge the SRF and TDEC to study Dr. Randall's report closely and to require that its recommendations be implemented as a condition to approval of Franklin's SRF loan application and of Franklin's new draft permit.**

Phosphorus limits are important because phosphorus is a major cause of algae and toxic blue-green algae blooms. Phosphorus from the Franklin plant and to a much lesser extent, other sources, feed the growth of algae and bacteria that cause the river's oxygen levels to drop very low and give the river a green color when in healthier conditions it would be clear.

Blue-green algae – actually a form of bacteria -- can also be also toxic to people and animals. As Dr. Randall noted:

Excessive growth of algae can be very detrimental to a stream, particularly a freshwater river like the Harpeth that experiences very low flows during the latter part of the growing season. During this time, phosphorus concentrations resulting from point source discharges [such as Franklin's sewage treatment plant] increase dramatically as the point sources dominate the water entering the stream, and as the phosphorus concentrations increase because of the decrease in fresh water inputs. The increase in the phosphorus concentrations, assuming no other conditions are limiting growth, can cause rapid growth of algae, called blooms, and unsightly and detrimental conditions can develop in the River. Examples of unsightly conditions are first the development of a green color in the River, the appearance of algae growth along the shallow reaches of the shore of the stream, the development of floating algal mats on the surface of the water, and the development of filamentous algal forms attached to the rocks in free-flowing sections of the river. The photos taken during October of 2014, Item 3 (above), illustrate that these conditions are developing in the Harpeth during the Fall of the Year, at a minimum, and more likely are present during the Summers as well. (Randall Report, p. 5 of 35 (emphasis added)).

Blue-green algae are undesirable because they are not food for fish, they form long, sticky strands, and some produce highly toxic compounds that can kill animals such as dogs, foxes and cows that drink from the stream. They can also kill humans. Green algae also can occur in nuisance blooms, but are suitable for food for aquatic animals and do not form toxic compounds, so reasonable amounts (sub-blooms) of green algae are desirable rather than onerous.

There are already signs of the shift from green to blue-green algae in the Harpeth River in the vicinity of Franklin and the COF STP. The algal growths shown in the photos of Item 2, above, are characteristic of blue-green algae, and ... it indicates that current conditions in the Harpeth favor blue-green growth, and there is the potential for the growth of much more toxic forms to grow such as *Microcystis*, the most common filamentous form of high toxicity,

Selenastrum, and Anabaena, the most toxic form. (Randall Report, p. 10 of 35 (emphasis added)).

As you may have noticed, algae blooms are becoming more of a problem nationally. Lake Erie has perennial problems with the issue: <https://www.theweathernetwork.com/news/articles/lake-eries-toxic-algal-bloom-returns/69822>, <http://lakeeriealgae.com/forecast/>. Our goal is to prevent local waters from having the same type and severity of problems as recently experienced in Florida, for example: <http://www.nytimes.com/2016/07/19/science/algae-blooms-beaches.html>.

- 2) Meaningful concentration limits for nitrogen. Excessive nitrogen continues to contribute to overloading the river with nutrients with resultant algae growth. This results in reduced oxygen levels during nighttime hours such that state standards for dissolved oxygen are not met. HRWA, TDEC, EPA have over twenty (20) years of monitoring data for dissolved oxygen that shows low dissolved oxygen conditions during hot summer, low flow river conditions. The concentrations drop significantly below state standards of 5.0 mg/l.

In summary, HRWA has long been an advocate for a cleaner Harpeth River. HRWA has focused on efforts to improve the water quality throughout the Harpeth so that it can meet the water quality standards required under state and federal law. We are hopeful that we can now work with Franklin on an equal footing to facilitate the issuance of a new draft permit in a way that will result in actual improvements in the river's water quality and benefit all who enjoy and love the river. We hope and expect that Franklin, TDEC and the SRF will do their part to improve water quality by issuing a permit with meaningful pollution reduction targets. HRWA stands ready to work cooperatively with all stakeholders to achieve that result.

Sincerely,

Harpeth River Watershed Association




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James M. Redwine, Director,  
Water Quality Protection and Sustainability Program

cc: Dorene Bolze, Executive Director, HRWA

Dr. Ken Moore, Mayor, Franklin  
Eric Stuckey, City Administrator, Franklin

The Harpeth River Watershed Association is a 501(c)(3) organization and all donations are tax deductible to the full extent allowed by law.  
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