

June 5, 2023

VIA EMAIL ONLY (greg.young@tn.gov)

Gregory T. Young, Esq., Deputy Commissioner
Bureau of Environment
Tennessee Department of Environment and Conservation
312 Rosa L. Parks Avenue, 2nd Floor
Nashville, TN 37243

**Re: Public Comments from Friends of Lick Creek in Opposition to the Proposed
WADC Wastewater Discharge to Lick Creek**

Dear Deputy Commissioner:

As you are aware, our firm has been asked to represent several concerned citizens of Hickman County and the Lick Creek watershed in opposition to the Water Authority of Dickson County's ("WADC" or "the Authority") proposed effluent discharge to Lick Creek near Primm Springs, Tennessee (NPDES Permit No. TN0082376). Please consider this letter my clients' formal public comments in opposition to the Authority's proposal and in support of the Tennessee Department of Environment & Conservation's ("TDEC" or "the Department") proposed permit denial on this matter.

In lieu of repeating the information contained in the previous correspondence from our firm to the Department on this matter, we are attaching our previous submissions and specifically incorporating such information as if set forth herein to ensure they are considered part of the formal record. Those submissions are specifically referenced below and attached. In addition to our previous submissions and the comments raised at the public hearing by those in opposition to the Authority's proposed project, we wanted to raise additional issues and highlight some of the primary points in support of our position.

I. Introduction

First and foremost, we would like to thank the Department for its time and effort in considering and addressing this proposed project. We strongly support and agree with the rationale as provided in your April 5, 2023 proposed denial of the permit at issue. As you noted from the large presence of over 350 citizens in opposition to this project at the recent public hearing in Hickman County, the entire community is extremely engaged and is very appreciative of the Department's continued public engagement with the citizens of Hickman County and those concerned about Lick Creek and the local watersheds in Middle Tennessee.

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As the Department heard from several concerned citizens on May 25, 2023, the overwhelming majority of citizens are not opposed to reasonable and planned growth in Hickman and surrounding counties. However, it is simply imperative to assess infrastructure needs on a regional level while considering the burden placed on those in the area in which the proposed discharge is located as required by the Department's Antidegradation rules. Despite asserting otherwise at the public hearing, WADC failed to engage the impacted communities and failed to properly consult with the local Hickman County officials prior to submitting its permit application. WADC's lack of transparency and attempts to move this project forward without engaging the local community is concerning.

II. Lick Creek is an Exceptional Tennessee Water

As discussed by several commenters and the Department, Lick Creek is an "Exceptional Tennessee Water" by virtue of its habitat for the coppercheek darter (*Etheostoma aquali*). Accordingly, no lowering or degradation of water quality in the receiving waters is allowable unless WADC's proposal fully satisfies the antidegradation requirements. Without a demonstration that no practicable alternatives exist, no degradation of Lick Creek's high-quality characteristics can be allowed – oxygen levels, nutrients, habitat, bacteria, industrial pollutants, etc. – not just potential factors that may impact the coppercheek darter. As is discussed below in detail, we believe that WADC has not demonstrated that there are no reasonable alternatives so as to allow degradation to Lick Creek. Moreover, WADC has not provided the Department with convincing evidence that important economic and social development in the area of the discharge will result from the proposed project. Additionally, given the limitations and problems in WADC's other receiving streams, it is reasonable to expect degradation of water quality in Lick Creek from the proposed discharge.

Furthermore, we have recently learned of the presence of an endangered mussel in Lick Creek.¹ The pale lilliput (*Toxolasma cylindrellus*) is a federally listed endangered freshwater mussel. The pale lilliput is a small mussel known to inhabit shallow reaches of smaller streams in less than three feet of water. They are known to inhabit shallow sand and gravel substrates with slow to moderate flows, like Lick Creek.

There are only two known naturally occurring populations of the pale lilliput; 1.) headwaters of the Paint Rock River in northern Alabama (*potentially extending into Franklin County, Tennessee*) and 2.) middle and upper reaches of Lick Creek.² The Lick Creek population is a recent discovery.

According to the United States Fish and Wildlife Service's five-year review of the status of the pale lilliput: "The existence of the pale lilliput continues to be vulnerable because of its highly restricted range, small population size, and continued impacts to its habitat. Because the pale lilliput is limited geographically within the PRR and Lick Creek drainages, catastrophic

¹ <https://www.fws.gov/species/pale-lilliput-toxolasma-cylindrellus>

² *Id.*

events such as spills or natural events (e.g., drought) could greatly reduce the geographic distribution or genetic viability of the pale lilliput. Habitat destruction or modification is presently the greatest threat to this species.”³ The presence of this endangered species further supports the necessity for protecting Lick Creek as an Exceptional Tennessee Water.

III. Lack of Important Social or Economic Development in the Area of Lick Creek

The antidegradation statement of the water quality criteria rules states, “[i]f the proposed activity will cause degradation of any available parameter above a de minimis level or if it is a new discharge of domestic wastewater, a complete application will: (ii) Demonstrate that the proposed degradation is necessary to accommodate important social or economic development in the area in which the waters are located.”

WADC’s submissions fail to adequately address the need for social or economic development in the area in which the waters are located. In fact, there is a significant disconnect in their original report and subsequent submissions. The original application consistently refers to the WADC service area, rather than the area in which the waters are located, when discussing the necessity of additional treatment capacity.

The proposed discharge location is approximately 8 miles away from the service area boundary. While WADC has tried to expand the definition of “area,” its contention lacks common sense and merit. WADC noted (as described in our previous submissions), “[i]t is anticipated that most of the growth will occur within the City of Dickson, the City of Fairview, and the area bounded by Interstate 40, Highway 46, Interstate 840, and Highway 100.” This area is nowhere near the discharge point and clearly not even inside the Lick Creek watershed. In fact, as planned, those citizens on Lick Creek will not even receive sewer service from WADC. The Authority has failed to submit data and evidence to satisfy the antidegradation requirements on this issue.

IV. WADC failed to Fully Consider Alternatives to the Proposed Discharge

A critical component of the antidegradation analysis is examination of an alternative discharge location. WADC’s alternatives analysis is flawed, in part, because it neglects to fully consider the alternative of discharging treated effluent to the Cumberland River. Without more detailed information to support the Authority’s cost estimate, it is difficult to determine if estimated costs are realistic or instead serve to diminish the perceived practicability of this regional alternative to discharging to a small stream. Of significance, a regional solution is consistent with Gov. Bill Lee’s priority in promoting conservation in Tennessee.

Regarding cost, WADC has not accounted for the long-term cost savings of not having to abandon an outdated Lick Creek alternative in future years after capacity there is exceeded and

³ https://esadocs.defenders-cci.org/ESAdocs/five_year_review/doc3833.pdf

then having to implement yet another small stream discharge plan. Regionalization of infrastructure for environmental management has been a successful tool to consolidate and limit environmental impacts and provide positive social and economic benefits to the local community.

While routing the discharge to the Cumberland River and regionalizing service is the true long-term option, WADC must consider adding capacity, water reclamation, and water reuse at its existing treatment facilities as alternatives to building a new facility in Hickman County that will discharge to Lick Creek. For example, additional capacity could be found in reducing infiltration, i.e., approximately 0.73 million gallons per day of capacity could be recovered if infiltration sources are eliminated, which would significantly delay WADC's need for expansion of treatment facilities. No costs or savings for this option have been provided by WADC, however.

V. Conclusion

The Friends of Lick Creek and citizens of Hickman County truly appreciate the Department's thoughtful review of this proposed project. We strongly support a regional solution to this regional issue. Lick Creek is simply not the answer. We want to help be part of solving this problem and desire to have continued community engagement to ensure that Hickman County is able to protect its natural heritage that is vital to the quality of life and attraction of newcomers, while affording capacity for reasonable economic expansion and planned growth.

Yours truly,

BUTLER SNOW LLP



B. Hart Knight
Katherine Barnes

BHK/jgl

Enclosure

cc: Commissioner David Salyers, TDEC (*via email only*)
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Stephanie Durman, Esq., TDEC (*via email only*)
David Jackson, Davey Resource Group (*via email only*)
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June 5, 2023

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March 17, 2022

VIA EMAIL ONLY (greg.young@tn.gov)

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Re: Opposition to Proposed WADC Wastewater Discharge to Lick Creek

Dear Deputy Commissioner:

As you are aware, my firm has been asked to represent several concerned citizens of Hickman County and the Lick Creek watershed in opposition to the Water Authority of Dickson County's ("WADC") proposed effluent discharge on Lick Creek near Primm Springs, Tennessee. Thank you and your colleagues for taking the time to meet with our clients and representatives from BDY Environmental last week to discuss our concerns about the proposed project. At the conclusion of our meeting, you requested a letter memorializing the issues we discussed. Please consider this letter our first response to your request as we continue to work on gathering information that will demonstrate that the WADC application is woefully inadequate and the proposed project does not and cannot comply with Tennessee Department of Environment & Conservation's ("TDEC") antidegradation rules and regulations.

I. Background and Summary

The WADC recently submitted a National Pollutant Discharge Elimination System ("NPDES") application to the TDEC Division of Water Resources ("DWR") for a new discharge of treated sewage wastewater to Lick Creek near Mile 10.3 in Hickman County. Along with the permit application materials, WADC submitted their Preliminary Engineering Report ("PER"), our review of which guides the basis for the following analysis of why TDEC should deny WADC's request for a permit.¹

In summary, WADC has failed to demonstrate that the degradation that will occur as a result of the proposed discharge is necessary to accommodate important social and economic development in the area. It also failed to consider that the proposed effluent outfall would discharge to an Exceptional Tennessee Water ("ETW"). Furthermore, WADC failed to undertake

¹ Water Management Services, LLC, "East Hickman County Water Reclamation Facility Preliminary Engineering Report," December 2021, (33 pages).

a thorough and complete alternatives analysis.

II. Lack of Important Social or Economic Development

The antidegradation statement of the water quality criteria rules states, “[i]f the proposed activity will cause degradation above a de minimis level or if it is a new discharge of domestic wastewater, a complete application will: (ii) Demonstrate that the proposed degradation is necessary to accommodate important social or economic development in the area in which the waters are located.”²

WADC’s PER fails to adequately address the need for social or economic development in the area in which the waters are located. In fact, there is a significant disconnect in their report. The PER consistently refers to the WADC service area, rather than the area in which the waters are located, when discussing the necessity of additional treatment capacity.

The area in which the discharge point is located is not within the 75-year planned service area of WADC’s new system as demonstrated by its PER. (**Attached hereto as Figure 1**).³ Rather, the proposed discharge location is approximately 8 miles away from the service area boundary. Furthermore, the 75-year planned service area for WADC does not include the Lick Creek Watershed according to its own PER. WADC notes, “[i]t is anticipated that most of the growth will occur within the City of Dickson, the City of Fairview, and the area bounded by Interstate 40, Highway 46, Interstate 840, and Highway 100.”⁴ This area is nowhere near the discharge point and clearly not inside the Lick Creek watershed. (**Figure 2**).

Thus, based on the two most practical, common-sense definitions of “the area in which the waters are located,” WADC has not and cannot demonstrate that the proposed degradation is necessary to accommodate important social or economic development in the area in which the waters are located.

Simply stated, WADC neither identifies nor substantiates socio-economic benefits to the outfall area, instead relying only on its broad and unsupported estimate that “between 100 and 500 new jobs” will result (in an unspecified area) from the project in the “next five to ten years.”⁵

Although demographic growth may result from expanded discharges, growth also brings social and economic challenges, such as traffic congestion, higher demand for municipal services, and need for additional infrastructure, including schools, arterial transportation routes, etc. Not only has the Applicant failed to detail the “important social and economic development in the area,” that would result from the Lick Creek discharge, it has not weighed the social and economic costs.

² Tenn. Comp. R. & Regs. 0400-40-03-.06 (1)(b)(2)(ii).

³ For clarity, the map attached as Figure 1 to this letter is labeled “Figure 2” in the PER and found at p. 4 of the PER.

⁴ Water Management Services, LLC, “*East Hickman County Water Reclamation Facility Preliminary Engineering Report*,” December 2021, p. 3.

⁵*Id.* at 22.

Notwithstanding the burden of proof is upon the applicant, the citizens opposing this project have very eloquently, professionally, and in large numbers demonstrated many social and economic rationale *against* this project. As noted by the public comments and the concerns at the recent citizen meetings, the community has several legitimate concerns that will significantly impact farming operations and residences due to increased flooding as a result of doubling the volume of water in Lick Creek, organic farming on and near Lick Creek, recreational fishing and paddling, property values, tourism, and the intrinsic value of the natural resource. We will continue to develop information, facts, and supplementing documentation of the many other economic and social factors that should be considered in support of a permit denial.

III. WADC failed to Fully Consider Alternatives to the Proposed Discharge Location

A critical component of the antidegradation analysis should be examination of an alternative discharge location, such as the Cumberland River or another larger receiving stream. The primary consideration for this alternative is avoiding the future obsolescence of discharge to a small stream, such as WADC is now experiencing. Discharging to a receiving water with ample assimilative capacity and absence of ETW concerns would have greater longevity and be appropriate to the magnitude and duration of WADC's proposed 75-year expansion plan.

WADC considered only a limited range of alternatives that focused strictly on technological options for managing a projected increase in sewer service demand. None of the alternatives considered in the PER included examining options to the proposed Lick Creek outfall location that will discharge treated effluent to an ETW with limited assimilative capacity.

In its PER, WADC declared the only feasible alternative is to double-down on the past, exhausted strategy of discharging to small streams.⁶ The existing WADC discharge locations on Jones Creek, Trace Creek, and Flatrock Branch are approaching capacity on these effluent-dominated systems. Surprisingly, WADC's preferred alternative is to discharge to yet another small stream.

At the ultimate proposed discharge of 12 million gallons per day (mgd), the Lick Creek outfall would again result in a WADC creating an effluent-dominated flow, far exceeding the stream's 7Q10 of 8.5mgd. WADC's cursory analysis of its preferred alternative included no consideration for the quality or quantity of the proposed discharge's effects to Lick Creek as an ETW, its pollutant load, its value as a recreational fishery, its aquatic habitat, or diminishment of resource values.

A complete alternatives analysis would consider other discharge locations. These locations would best exclude ETWs or streams with current pollutant loads and limited assimilative capacities that would soon render their use as effluent receiving waters to be obsolete, leading to

⁶ "[a]ll three existing treatment facilities discharge into small streams in the Harpeth River Basin," *Supra*, PER, p. 18.

a repetition of WADC's current need for additional capacity.

The limitations of small streams to handle effluent loads in rapidly growing areas is intuitive, but also demonstrated by WADC's own experience. Other localities in intensive growth communities, such as Spring Hill, have encountered similar limitations. It is short-sighted for WADC not to consider a longer-term solution for their ambitious 75-year plan. In particular, a discharge location on the Cumberland River (on which WADC also has a water intake and water supply treatment plant) needs consideration as an alternative. This location would not encounter ETW restrictions or assimilative capacity limitations. Moreover, it would be more squarely within WADC's service area within which the social and economic benefits of the project might accrue.

IV. Lick Creek is an Exceptional Tennessee Water

Although apparently unrecognized by the Applicant, Lick Creek and its downstream reaches at which the effluent outfall location is proposed has been designated as an Exceptional Tennessee Water because of the presence of the coppercheek darter (*Etheostoma aquali*), a State-listed (threatened) species. Tennessee's Antidegradation Statement provides that a proposed activity resulting in more than *de minimis* degradation of aquatic habitat may only be justified by achieving "important economic or social development in the area."

Further, no violation of water quality criteria in the receiving waters is allowable. In addition to harboring a population of *E. aquali*, there is anecdotal evidence of naturally-reproducing trout (not stocked) occurring within Lick Creek. Local residents have reportedly caught and photographed both brown trout and rainbow trout from Lick Creek. **(See attached photographs).** A review of the Tennessee Wildlife Resources Agency (TWRA) trout stocking schedule confirms that the Agency only stocks two streams in Hickman County, Cane Creek and Mill Creek.⁷ WADC should have the burden of proving the lack of trout in Lick Creek in order to allow the proposed discharge of water with dissolved oxygen ("DO") of less than 6 and potentially 8. Currently, WADC's model indicates that the DO of the effluent *will be below* 6.

In its application materials, WADC fails to consider Lick Creek's status as an ETW, or the effects to aquatic habitat resulting from the proposed effluent discharge. Consequently, WADC's application is incomplete and illustrates its lack of concern for or accommodation of sensitive habitats and regulatory requirements.

V. WADC Discharges to Lick Creek Will Result in More than *de minimis* Degradation

Downstream of the WADC's proposed outfall location, Lick Creek receives flows from tributaries that are impaired by *Escherichia coli*, resulting from ubiquitous and intensive livestock production in the Lick Creek watershed **(Figure 3)**. TDEC has documented that *E. coli*

⁷ <https://www.tn.gov/content/dam/tn/twra/documents/fishing/trout/Trout-Stocking-Schedule-Complete.pdf>

concentrations in Lick Creek, both upstream and downstream of the proposed WADC outfall discharge, at times exceed the water quality criterion for recreation. During these conditions of high *E. coli* concentrations in Lick Creek, no assimilative capacity is available for additional *E. coli* loads.

Further, TDEC monitoring data include *E. coli* water quality exceedances downstream of two of WADC's existing effluent discharges (Jones Creek and Trace Creek) (**Figure 4**). TDEC monitoring data are not available from Flatrock Branch, to which WADC discharges from its Fairview WWTP, but we note that a moratorium previously has been imposed on additional sewage connections because of chronic system overflows that likely affected Flatrock Branch.

In their application materials, WADC does not address the level of degradation resulting from the proposed discharge to Lick Creek, nor consider the existing conditions in the stream, which will not accommodate system exceedances of *E. coli*.

VI. Additional Background Information

Currently, WADC operates three wastewater treatment plants ("WWTPs") that serve portions of Dickson and Williamson Counties, and which respectively discharge to Jones Creek, Trace Creek, and Flatrock Branch, all of which are tributaries to the Cumberland River (**Figure 4**). Each of these plants is approaching its design capacity and all of them discharge to small, effluent-dominated tributaries to the Harpeth River.

If approved, the proposed discharge to Lick Creek would be the first step of a planned overhaul and expansion of WADC's wastewater treatment system. The expansion is comprehensive, assumes an ambitious, 75-year planning horizon, and includes construction of multiple facilities, including:

- A proposed new treatment plant (East Hickman County Water Reclamation Facility), targeted to be located in Hickman County, and which would receive flows diverted from existing WADC facilities in Williamson and Dickson Counties;
- Construction of two new regional pump stations to convey raw sewage from Williamson and Dickson Counties to Hickman County;
- Construction of two new raw-sewage force mains, respectively flowing from Williamson and Dickson Counties to Hickman County;
- Construction of a proposed treatment plant in Hickman County (the prospective East Hickman Water Reclamation Facility) that will receive both new and diverted raw sewage from Williamson and Dickson Counties;

- Reversal of flow in an existing force main that would deliver raw sewage from the Dickson area to the proposed new Hickman plant;
- Construction of an effluent force main from the prospective new East Hickman treatment plant (location is yet to be determined) to a proposed outfall on Lick Creek;
- Future upgrades of the prospective East Hickman facility to an ultimate 12 million gallon per day (mgd) capacity.

It is important to note that the proposed new treatment plant in Hickman County and its discharge to Lick Creek are primarily intended to accommodate existing and projected capacity needed by Dickson and Williamson Counties (chiefly, the Dickson and Fairview communities, but also, more distant communities such as Burns and White Bluff). The estimated additional capacity needed to serve Hickman County is substantially less than the aggregate of the other served communities and includes the speculative demand from a hypothetical “large wet industry” that may someday locate in Hickman County. Accordingly, most of the additional projected capacity of the proposed WADC expansion, and its related discharge to Lick Creek, will benefit areas other than Hickman County, and certainly not areas within the Lick Creek watershed.

Lastly, as discussed during our meeting, residents in the Lick Creek watershed obtain their drinking water from springs adjacent to Lick Creek or from wells. Several citizens have expressed concerns, not only about contamination, but about the effluent discharge raising the water levels to the extent they no longer have access to their springs for drinking water.

VII. Conclusion

For all the foregoing discussions, frankly, it is outrageous for WADC to propose spending \$249,000,00.00 to build a sewer plant to dump *12 Million Gallons a Day* of effluent into Lick Creek, an Exceptional Tennessee Water with a low flow of 8mgd, thereby over doubling the volume of the creek with effluent. The discharge predominantly will service areas outside of Hickman County, while at the same time potentially devastating the lives and livelihoods of the local citizens in the Lick Creek area.

Thank you for advising us of your upcoming meeting with WADC, and we respectfully suggest that you consider just telling them outright that they should withdraw their woefully inadequate, pending application and go back to the drawing board and begin by performing a detailed and exhaustive alternatives analysis eliminating all practicable alternatives before wasting any more time and resources on a project that appears failed from the start.

Gregory T. Young, Esq.

March 17, 2022

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Yours truly,

BUTLER SNOW LLP

A handwritten signature in blue ink, appearing to read 'B. Hart Knight', with a long horizontal flourish extending to the right.

B. Hart Knight

cc: Commissioner David Salyers, TDEC (*via email only*)

Jennifer Dodd, TDEC (*via email only*)

Stephanie Durman, Esq., TDEC (*via email only*)

David Jackson, BDY (*via email only*)

Sam Parish, BDY (*via email only*)

Glen Rohrbach, BDY (*via email only*)

J.W. Luna, Butler Snow (*via email only*)

Amanda Mathis (*via email only*)

Rodes Hart (*via email only*)

March 22, 2022

VIA EMAIL ONLY (greg.young@tn.gov)

Gregory T. Young, Esq., Deputy Commissioner
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Re: Supplemental Information – Trout Present in Lick Creek

Dear Deputy Commissioner:

I am writing to supplement my previous letter of March 17, 2022, to include more information regarding the presence of trout in Lick Creek. Below are photographs and information from citizens who have caught trout in Lick Creek.

- Austin Bass caught this trout last year near Highway 7, approximately 150 feet from the proposed discharge location.



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- Chris Allen's son caught the following two different trout in Lick Creek several thousand feet downstream of the discharge point where Hassel Creek meets Lick Creek.





- Jason Ragsdale has caught trout in Lick Creek in what is known as the “Pine Bluff Hole.” He does not have photographs, but others were there to witness the trout.
- Jacob Jennette caught an approximately two-pound rainbow trout in Lick Creek a few years back approximately 200 feet from the proposed discharge location. His brother was there to witness the trout.
- Steve Runnions has caught trout at both the “Pine Hole” and at Highway 7.

- Drew Cochran has caught trout at the “Pine Hole” on Lick Creek.
- Vange Johnson has caught a trout 200 feet down stream in the “Blue Hole” on Lick Creek. She has also seen several large trout just upstream from the Primm Springs Road Bridge and along the river while kayaking. Her older son has seen them as well.
- Furthermore, Vange Johnson would often stop to speak with two very old men who fished the “Blue Hole.” Both men have caught “lots of trout” including large ones as well just downstream from the discharge point.
- Here are additional photographs of a brown trout and a rainbow caught in Lick Creek.





A review of the Tennessee Wildlife Resources Agency (“TWRA”) trout stocking schedule confirms that TWRA only stocks two streams in Hickman County, Cane Creek and Mill Creek.¹ Thus, with all of the trout caught and found in Lick Creek, it is very likely that they are naturally reproducing, which would require more stringent standards of WADC’s dissolved oxygen parameters. WADC should have the burden of proving the lack of naturally reproducing trout in Lick Creek in order to allow the proposed discharge of water.

As always, we appreciate your attention to this matter. Do not hesitate to reach out with any questions.

¹ <https://www.tn.gov/content/dam/tn/twra/documents/fishing/trout/Trout-Stocking-Schedule-Complete.pdf>

Mr. Gregory Young, Esq.

March 22, 2022

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Yours truly,

BUTLER SNOW LLP

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B. Hart Knight

cc: Commissioner David Salyers, TDEC (*via email only*)

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David Jackson, BDY (*via email only*)

Sam Parish, BDY (*via email only*)

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March 3, 2023

VIA EMAIL ONLY (greg.young@tn.gov)

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Re: Continued Opposition to Proposed WADC Wastewater Discharge to Lick Creek – Antidegradation Analysis

Dear Deputy Commissioner:

As you are aware, our firm has been asked to represent several concerned citizens of Hickman County and the Lick Creek watershed in opposition to the Water Authority of Dickson County's ("WADC" or "the Authority") proposed effluent discharge to Lick Creek near Primm Springs, Tennessee. Please consider this letter further memorialization of our continued opposition to WADC's proposed project.

In December 2022, WADC submitted to the Tennessee Department of Environment & Conservation's ("TDEC" or "the Department") a supplemental report ("Supplement")¹ and an accompanying economic and fiscal impact study,² which attempt to remedy WADC's failure to address the Exceptional Tennessee Waters designation of Lick Creek and to fully consider alternative discharge locations in its previous analysis of alternatives and the alleged social and economic importance of the project. Despite the Supplement, WADC *still* fails to demonstrate that the proposed degradation of Lick Creek complies with TDEC's antidegradation rules and regulations.

This letter will address WADC's continued failure to properly show that there are no practicable alternatives to prevent or lessen degradation associated with the proposed activity, the proposed degradation is necessary to accommodate important social or economic development in the area in which the waters are located, and the proposed discharge will not violate the water quality criteria for existing uses in receiving waters. For the reasons outlined in this letter, we respectfully request that WADC's permit for a new discharge be denied.

¹ "East Hickman County Water Reclamation Facility Supplemental Information for Water Authority of Dickson County," prepared for William L. Penny, Burr Forman LLP, December 2022.

² Livingston, Steven, and Arik, Murat, page 4, "Proposed East Hickman County Water Reclamation Facility: Direct and Indirect Economic and Fiscal Impact," Appendix to "Supplemental Information."

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I. WADC Failed to Demonstrate No Practicable Alternatives to Prevent or Lessen Degradation of Lick Creek

New domestic wastewater discharges to any Exceptional Tennessee Water can “only be authorized if the applicant has demonstrated to the Department that there are no practicable alternatives to prevent or lessen degradation associated with the proposed activity.” Tenn. Comp. R. & Regs. 0400-40-03-.06(4)(c)1. In its Preliminary Engineering Report (PER) and Supplement, WADC wholly failed to consider any practicable alternatives to a discharge to Lick Creek. WADC’s premise is that expansion of WADC’s system necessitates discharge to Lick Creek as the only practicable alternative. We contend that its analysis of alternatives selects the Lick Creek discharge by discounting the use of all other alternatives. This “straw-man” approach to favor a sole engineering alternative benefitting WADC’s ambitions not only fails to genuinely evaluate viable alternatives but also overlooks the social and economic value of the Lick Creek resource as it exists today and as it should be maintained as part of Tennessee’s important economic attributes.

A. *WADC Failed to Consider the Socio-Economic Importance of Tennessee’s Natural Assets*

An important basis of Tennessee’s economic success is its aesthetic appeal – scenery, open spaces, and reduced population density throughout large areas of countryside. These attributes are primary drivers that attract businesses, talent, and visitors to the state, including recent investments by electric vehicle manufacturing, technology, and other desirable industries.

Balancing economic interests and conservation is one of Tennessee’s virtues. Tennessee’s recognition of conservation as an inherent economic value has not only benefitted its citizens’ quality of life for decades, but has benefitted the state’s economy, as well (e.g., Great Smoky Mountains National Park, Big South Fork National River and Recreation Area, Land Between the Lakes National Recreation Area, and, of course, Tennessee’s award-winning state parks).

Tennessee’s ability to leverage its conservation values to accrue economic benefit rests with its continuing conservation of the State’s scenic character and the integrity of its natural resources. This challenge will become increasingly difficult as the state welcomes growth in industry and population.

Deliberative and rigorous evaluation of alternatives such as regionalization of supportive infrastructure, use of new technologies, and commitment to innovate beyond past practices, will be necessary to maintain Tennessee’s conservation-based economic values. The benefits and costs, including the socio-economic costs of reducing the State’s natural assets, should be carefully considered for projects driven by or resulting in population growth and rapid, drastic changes in a locality’s character. The Department already recognizes the inherent monetary value of natural resources through the Natural Resource Damage Assessment program, by which a dollar amount is calculated and assessed for injuries to natural resources of the State.

In many cases, projects' benefits will far outweigh those costs, by creating jobs, tax revenue, and other advantages that overcome negligible changes to many areas' existing conservation values. However, in all cases, the alternative of foregoing a proposed project, or modifying it to be less costly to an area's quality of life and its natural character, should be thoroughly evaluated. Such are the challenges of promoting Tennessee's burgeoning economy while retaining the State's ability to attract newcomers, and the values they bring to us.

B. WADC Failed to Consider a No-Action Alternative that would Prevent Degradation to Lick Creek

The purpose of Tennessee's antidegradation statement and standards is to "fully protect existing uses of all surface waters." Tenn. Comp. R. & Regs. 0400-40-03-.06(1)(a). WADC has not properly evaluated a No-Action alternative to its proposed discharge to Lick Creek to preserve its existing uses. The evaluation of a No-Action alternative is widely used as a base-case reference for alternatives analyses that weigh a project's purpose and need, socio-economic consequences, and environmentally damaging results. Consideration of a No-Action alternative is particularly important in contrasting a project's socio-economic costs and benefits against adverse environmental and social effects. It is a fundamental element of the National Environmental Policy Act's evaluation process incorporated in Environmental Assessment and Environmental Impact Statement documents.³ Likewise, TDEC is familiar with the merits of including No-Action alternatives as part of its permit review process, such as its Aquatic Resource Alteration Permit (ARAP) program.

In both the PER and the Supplement, WADC overlooks the social and economic value of the Lick Creek resource as it is today, with its current, existing uses as an Exceptional Tennessee Water and without a discharge of sewage effluent. Furthermore, the antidegradation regulations provide that an applicant's social and economic justification "should *demonstrate an overall benefit to the local community*, not just a benefit to the applicant." Tenn. Comp. R. & Regs. 0400-40-03-.06(1)(b)4. Here, there is a substantial benefit to the local community in not having a discharge to Lick Creek.

TDEC's antidegradation review is not limited to hard economic dollars such as jobs, tax revenue, or other economically related measures. To the contrary, the regulations specify that the applicant is to evaluate the "social/cultural impacts" of the proposed degradation. TDEC and WADC have heard from hundreds, if not thousands, of community members regarding the importance of Lick Creek as a natural resource to Hickman County.

As demonstrated by letters, voicemails, and other communications, there is an intrinsic value to having such a resource left undisturbed. Several members of the community have commented that they moved to rural Hickman County for the benefits associated with not having pollution, traffic congestion, overcrowded schools, and for the natural character of being away

³ 43 CFR 46.30: "the no action alternative looks at effects of not approving the action under consideration."

from unmitigated development. TDEC has heard from numerous citizens who were baptized in Lick Creek, who have family farms going back generation upon generation, and who grew up fishing and paddling on Lick Creek. Yet, WADC fails to consider the importance of these social and cultural attributes that result from an unimpacted Lick Creek. In addition to the intrinsic economic value, WADC failed to consider the social benefits, such as families traveling to the local Lick Creek community for camping, fishing, and other recreational activities.

Under a deliberative No-Action analysis, it could be determined that the proposed East Hickman Water Reclamation Facility (EHWRF) service area and Lick Creek discharge could encounter substantial costs associated with installing, operating, and maintaining a collection and transfer system in hilly terrain with a lack of sufficient customer density. As the location of the proposed EHWRF hasn't been identified, it is impossible to make this basic determination of comparative costs.

Similarly, inclusion of a No-Action alternative in WADC's analysis would consider the regulatory viability of WADC's removing large volumes of water from the Cumberland River (as it does currently), but then discharging substantial portions of it to Lick Creek in the Tennessee River basin (as is proposed). Does the proposed inter-basin transfer fail the antidegradation test of practicability as not being "able to put into practice", particularly over a long planning horizon of 75-plus years?^{4,5} WADC's analysis hasn't addressed this question.

In sum, WADC has failed to fully evaluate alternatives to a discharge to Lick Creek because it has not considered a No-Action alternative. Therefore, its alternatives analysis is flawed and does not meet the antidegradation requirements.

C. WADC Failed to Consider the Practicable Alternatives of Routing the Discharge to the Cumberland River and Adopting a Long-term, Regional Approach, Water Reuse and Reclamation, and Decentralized Systems

WADC's alternatives analysis is further flawed because it neglects to fully consider the alternative of discharging treated effluent to the Cumberland River. Without more detailed information to support the Authority's cost estimate, it is difficult to determine if estimated costs are realistic or instead serve to diminish the perceived practicability of this regional alternative to discharging to a small stream.

⁴ "As the population and demand for water resources grow, it is prudent to engage in planning for the future and to have an explicit mechanism in place to regulate proposals for the diversion of water from one river basin to another. By removing water from rivers, such inter-basin transfers raise issues of the protection of the public health, safety, welfare and the environment, as the water is no longer available for use in the original stream." Rule 0400-40-13.

⁵ The U.S. Army Corps of Engineers scrutinizes potable water withdrawals from reservoirs it controls, including Cheatham and Old Hickory Reservoirs on the Cumberland River. Withdrawals resulting in inter-basin transfers have been a topic of concern with regard to the Corps' reservoir management policy and ensuring sufficient supply for all users (e.g., City of Clarksville); *personal communication*, Gene C. Koonce, PE, and David E. Jackson, January 24, 2023.

With regard to cost, WADC has not accounted for the long-term cost savings of not having to abandon an outdated Lick Creek alternative in future years when capacity there is exceeded and then having to implement yet another small stream discharge plan. Regionalization of infrastructure for environmental management has been a successful tool to consolidate and limit environmental impacts and provide positive social and economic benefits to the local community. An example is the past practice of local municipal or county landfills that have now been largely replaced by regional facilities that receive and manage waste from many counties at a single facility where environmental, financial, and regulatory risk are consolidated under a single engineered design and permit. Such a regional approach should be reconsidered as a practical alternative here.

While routing the discharge to the Cumberland River and regionalizing service is the true long-term option, WADC must consider adding capacity, water reclamation, and water reuse at its existing treatment facilities as alternatives to building a new facility in Hickman County that will discharge to Lick Creek. For example, additional capacity could be found in reducing infiltration, i.e., approximately 0.73 million gallons per day (MGD) of capacity could be recovered if infiltration sources are eliminated, which would delay WADC's expansion of treatment facilities until 2030. No costs or savings for this option have been provided by WADC, however. Additionally, cost-benefit considerations for water reuse are missing from WADC's analysis. WADC's alternatives analysis fails to recognize neighboring communities such as Spring Hill, Smyrna, and Murfreesboro are incorporating this strategy into their systems.⁶ Particularly relevant is the possibility of using treated effluent from WADC's White Bluff plant to irrigate the golf course at TDEC's Montgomery Bell State Park. Furthermore, WADC hasn't provided a straightforward analysis of using decentralized systems as a viable alternative to a Lick Creek discharge. WADC could own and operate these systems and, if they were incorporated within the WADC service area, the need for centralized treatment would be reduced, eliminating the need for a discharge to Lick Creek.

WADC has failed to fully consider numerous alternatives, including routing to the Cumberland River and adopting a regional approach. It has also failed to consider use of its existing systems, water reuse, and water reclamation, all of which would prevent or reduce the level of degradation to Lick Creek, and all of which are practicable alternatives pursuant to Rule 0400-40-03-.06(1)(b)3(i).

II. WADC Failed to Demonstrate the Proposed Degradation is Necessary to Accommodate Important Social or Economic Development in the Lick Creek Area

Not only must an applicant for a new discharge to an Exceptional Tennessee Water demonstrate that no practicable alternatives exist, but the applicant must also show that "the degradation is necessary to accommodate important economic or social development in the

⁶ *Ibid.*

area.”⁷ Tenn. Comp. R. & Regs. 0400-40-03-.06(4)(c)1. WADC plans to construct the EHWRP at an unidentified location (somewhere within a ca. 1,400-acre area) and presumes that its system must be expanded. WADC claims that the discharge to Lick Creek is the only practicable alternative and is necessary to *accommodate* expected population growth (and the related demand for expanded sewer treatment facilities) in the “currently unsewered areas.” However, in the next breath, WADC also claims that the expansion and discharge to Lick Creek is needed to *stimulate* growth in these areas.⁸ Upon close inspection, neither of these claims are valid.

A. WADC Fails to Consider the Social and Economic Costs Resulting from a Sewage Effluent Discharge into Lick Creek

1. Costs Resulting from “Growth” Omitted from Social and Economic Analysis

WADC fails to consider the various costs to the local community of its proposal, including the growth that it claims will result from the proposed project. For WADC, “growth” entails such parameters as population and population density, median household income, home values, reduction of poverty rate, real gross domestic product (GDP) per capita, business establishment, and firms with over 100 employees. WADC assumes that all of these components of growth are desirable (certainly, many are), but have no concomitant adverse effects, such as increased costs of additional infrastructure for roads, landfill capacity, schools, and emergency services, the effects of sprawl, increased pollutant loading to air and water resources, diminishment of wildlife habitat, and the loss of Tennessee’s intrinsic conservation values.

These costs that would accrue from the growth stimulated by the EHWRP and its discharge to Lick Creek have not been considered or analyzed by WADC to determine if a net socio-economic benefit would result from the project’s approval. Rather, WADC has assumed that only benefits come with its proposed expansion in service to “growth.”

Anyone who has witnessed the changes (e.g., congested traffic, long commutes, spiraling costs of living and property taxes) brought to middle Tennessee in the last decades can attest that all growth is not all good. WADC’s presumption otherwise is simplistic and self-serving. In fact, Dickson and Hickman Counties’ more modest population and density increases over the past 20 years, as compared to the steeply inclining trends experienced by Williamson County and the Nashville Metropolitan Statistical Area (MSA), as has been documented by WADC, are considered by many to be preferable to the boom conditions in Williamson and the Nashville

⁷ We reiterate here, from our letter of opposition dated March 17, 2022, that WADC has failed to demonstrate the important socio-economic development in the area *in which the waters are located*, per Rule 0400-40-03-.06(1)(b)2(ii).

⁸ “For Williamson County, the question is how much additional infrastructure is needed to keep up with the evident growth. For Hickman County, alternatively the question is whether additional infrastructure is needed to keep the existing population let alone launch more economic growth”; Livingston, Steven., and Arik, Murat, page 4, “*Proposed East Hickman County Water Reclamation Facility: Direct and Indirect Economic and Fiscal Impact*,” page 4, Appendix to “*Supplemental Information*”, Supra.

MSA.⁹

2. *Environmental Costs of Growth: Non-compliant Discharges to Small Streams*

Through decades of mostly modest population growth, WADC has discharged treated sewage effluent to small streams, with invariable upsets and violations that have resulted in impaired water quality. Now, as part of a 75-year plan to expand its system, WADC proposes to continue this small-stream discharge strategy in yet another stream, Lick Creek, an Exceptional Tennessee Water, popular fishing stream, and habitat for the coppercheek darter (*Etheostoma aquali*) – a state-listed (Threatened) species. Moreover, Lick Creek is a major tributary to the Duck River, recognized by the U.S Geological Survey as one of the most biologically diverse rivers in North America.

Specifically, WADC currently discharges treated sewage effluent to Jones Creek, Flatrock Branch, and Trace Creek (all receiving streams are tributaries to the Harpeth River in the Cumberland River watershed). These relatively small streams, with 7Q10 flows ranging from approximately 0 to 0.82 MGD, have periodically received non-compliant discharges from their respective WADC treatment plants.¹⁰

Moreover, WADC has a history of overflows from sewage pump stations and lines used to move raw and treated sewage throughout its system. One such example is WADC's release of untreated sewage from a WADC pump station in the headwaters of Gin Branch in Dickson County, a tributary to Turnbull Creek. A break in a 10-inch force main resulted in the release to Gin Branch, and to a downstream private pond, of an unknown volume of raw sewage pumped at a rate of 200 gallons per minute (gpm) for an unknown duration.¹¹ Effects of the release persisted far downstream of the WADC pump station.

Non-compliant discharges and violations have a socio-economic cost that is commonly calculated by TDEC, the U.S. Environmental Protection Agency, the National Oceanic and Atmospheric Agency, and other agencies assessing Natural Resource Damages, using methods that quantify money damages for injury to streams, groundwater, wetlands, and other natural resources. Often, these claims are substantial and are indicative not only of the loss of socio-economic value held by the resources and to communities and users of resources, but also to the responsible entities, including shareholders and rate payers.

Despite its history of non-compliant discharges, WADC has not determined the costs of upsets and violations that could be reasonably expected to result from its proposed expansion, use of an EHWRP, and discharge to Lick Creek over WADC's proposed 75-year planning

⁹ *Ibid.*, Appendix, "Figure 1: Population Density, 2000 to 2020," p. 2.

¹⁰ Law, George, Tasker, Gary, and Ladd, David, "*Streamflow-Characteristic Estimation Methods for Unregulated Streams of Tennessee*," Scientific Investigations Report 2009-5158, U.S. Geological Survey, 2009. *See also* NPDES Permit No. TN0020460 issued to WADC.

¹¹ Water Authority of Dickson County, Permit #TN0066958, release record dated November 28, 2017.

horizon. The determination of anticipated Natural Resources Damage Assessment costs is an important factor to consider in a No-Action alternative, particularly with regard to Tennessee's antidegradation statement and Lick Creek's Exceptional Tennessee Water status. This consideration is in keeping with the essential need to recognize and assign intrinsic economic values to Tennessee's natural assets.

In its PER and Supplement, WADC assumes that the attributes of growth, which it claims are important from a socio-economic standpoint, can only be attained by directing sewage effluent to Lick Creek. However, as WADC's own research shows, growth *has* been occurring in the relevant portions of counties that WADC purports will benefit from a discharge of effluent to Lick Creek.

For instance, the Supplement's appendix illustrates that Dickson County's population growth rate has exceeded that of Tennessee's in the period from 2015 to 2020, and that Hickman County's growth rate, substantially similar to Tennessee's rate in previous years, has increased substantially as compared to the preceding 5-year interval (2010 to 2015).¹² These gains in population have occurred without discharging effluent to Lick Creek.

Particularly compelling is WADC's documentation that population growth occurs even during the imposition of a moratorium on use of sewage treatment facilities.¹³ Contradicting its own PER, WADC's Supplement appendix shows that, during the Fairview sewer moratorium (variably cited by WADC as beginning in 2004 or 2006, and ending in 2011, see footnote), the population growth rate in the Fairview community of Williamson County *exceeded or equaled Williamson County's rate* during the moratorium up until the disastrous collapse of the housing market caused by the Great Recession that began in the latter part of 2008.^{14,15} Even though recovery from the recession took years, WADC's Supplement shows that Fairview's population growth was strong during the moratorium (up until the Great Recession), and began to recover *prior* to the lifting of the sewer moratorium in 2011.

¹² Livingston and Murat, *Supra.*, Figure 3: Population Growth by Five Year Intervals, page 3.

¹³ *Ibid.*, Figure 12: Population Growth in Fairview vs. Williamson County Overall, page 13.

¹⁴ "It is important to note that growth in the City of Fairview has been impacted by a sewer moratorium that was in place from 2006 to 2011. ... In 2004, a moratorium was in effect due to chronic overflows... WADC acquired the Fairview system in 2006 and took immediate steps to resolve the issues with overflows, resulting in the lifting of the moratorium in 2011. The moratorium affected growth in Fairview during a significant boom within the mid-state; therefore, it is important to consider the growth within the other cities in Williamson County as a indicator of what the normal growth rate in Fairview should have been." *East Hickman County Water Reclamation Facility Preliminary Engineering Report, Supra.*, page 7.

¹⁵ "The stock market crash that heralded the arrival of the recession occurred on September 29, 2008... The recession lasted 18 months and was officially over by June 2009. However, the effects on the overall economy were felt for much longer. The unemployment rate did not return to pre-recession levels until 2014, and it took until 2016 for median household incomes to recover." "How Long Did the Great Recession Last in 2008?", Forbes, <https://www.forbes.com/sites/qai/2022/10/19/how-long-did-the-great-recession-last-in-2008/?sh=786388ba56b0>, accessed February 16, 2023.

WADC presumes that sewage effluent discharging to Lick Creek is necessary to improve the area's quality of life as measured by several categories. Again, WADC's own information refutes this presumption.

WADC has compared various economic statistics of Williamson, Dickson, and Hickman Counties that are within the proposed EHWRP service area and which WADC presumes will benefit from effluent discharge to Lick Creek. These statistics, comprising median household income, change in median home values, poverty rate, real GDP per capita growth, growth in business establishments, and number of firms with over 100 employees, are illustrated on graphs and tables in WADC's Supplement appendix,¹⁶ and further explored below.

a. Median Household Income

Looking closely at the median household income in Hickman County, we see that it has risen at similar rates as Dickson County's and Tennessee's state-wide increases of this important economic metric.¹⁷ In fact, census data indicate that median household income growth rate in both counties in recent years *exceeds* Tennessee's state-wide rate, without a sewer system expansion, or the "benefit" of discharging treated effluent to Lick Creek.

Also notable is WADC's analysis of the median income of those populations in the "currently unsewered areas south of I-40 in Dickson, Hickman, and Williamson Counties" that are targeted to be served in WADC's expanded service areas. Surprisingly, WADC's analysis shows that these populations in the Hickman and Dickson County portions of the referenced area *already enjoy median incomes that exceed those of their respective county-wide populations*, despite the absence of a discharge to Lick Creek, or that portions of the remaining, lower-income populations in those counties are now served by sewer facilities.¹⁸

b. Median Home Values

Similarly, WADC's data indicate that median home values have risen significantly in the period 2010 to 2020 in Hickman and Dickson Counties, along with those of Williamson County, the Nashville MSA, and Tennessee state-wide.¹⁹ In fact, although no discharge to Lick Creek was present to support these trends, Dickson's increase of this metric *exceeded* both

¹⁶ It should be noted that WADC's inclusion of Williamson County's statistics doesn't acknowledge that, as the wealthiest county in Tennessee ("*These are the Wealthiest Counties in Tennessee*," Chattanooga Times Free Press, June 14, 2022, <https://www.timesfreepress.com/news/2022/jun/14/wealthiest-counties/>, accessed February 18, 2023), and among the twenty wealthiest counties in the U.S. ("*Richest Counties in the U.S.*," Forbes, December 21, 2021, <https://www.forbes.com/sites/andrewdepietro/2021/12/21/richest-counties-in-the-us/?sh=77b0a1c32ecd>, accessed February 18, 2023), Williamson is hardly comparable to other counties in the proposed expanded WADC service area. Its comparison to Hickman and Dickson exaggerates Williamson's status among the three counties and supports the false implication that the proposed discharge to Lick Creek will similarly lift the socio-economic conditions of "unsewered areas" in Hickman, Dickson, and Williamson. Likewise, there can be no attributing Williamson County's good economic fortune to discharging effluent to small-stream systems.

¹⁷ Livingston and Murat, 2002, *Supra*, Figure 4d: Median Household Income Since 1995, page 5.

¹⁸ *Ibid.*, Table 4: Characteristics of those Areas Currently Unserved by a Wastewater Facility, page 11.

¹⁹ *Ibid.*, Figure 5: Change in Median Home Values 2010 to 2020, page 5.

Williamson's and Tennessee state-wide. Hickman's growth in median home values approached or equaled 20% during this period and will likely continue without the need for WADC to discharge sewage effluent into Lick Creek.

c. Poverty Rate

Poverty rate, perhaps the most important metric among the three counties, shows appreciable improvement for the years 2012 to 2020.²⁰ We reiterate that this socio-economic lift occurred despite no discharges of effluent to Lick Creek. In fact, among the compared jurisdictions (Hickman, Dickson, and Williamson Counties, and Tennessee state-wide), Hickman County shows the steepest decline in the percentage of impoverished people in the county. Hickman's rate is shown as recently approaching Tennessee's decreasing statewide rate. Moreover, Dickson's relatively steep decline in poverty rate surpassed Tennessee's state-wide rate. These important improvements would be expected to continue even without WADC's proposed Lick Creek discharge.

d. Business Establishments

WADC evaluated Growth in Business Establishments among Hickman, Dickson, and Williamson Counties, and the Nashville MSA, as well as Tennessee's state-wide numbers.²¹ Here again, positive trends in Hickman and Dickson Counties *exceeded* that cited for Tennessee across the state (although understandably far below those for Williamson and the Nashville MSA). Of course, no discharge to Lick Creek was present to account for this growth.

e. Number of Firms with Over 100 Employees

WADC's evaluation of the number of firms in each of the compared counties, the Nashville MSA, and Tennessee's state-wide metric, shows that all compared jurisdictions, including Hickman and Dickson Counties, have *added* firms of over 100 employees since recovering from the Great Recession.²² These data suggest that the proposed Lick Creek discharge is unnecessary to produce positive socio-economic benefits in the area.

f. Employment Change

WADC's analysis indicates that positive employment changes in the most recent 5-year interval (2015 to 2020) have exceeded 10% for Hickman, Dickson, and Williamson Counties, as well as for the Nashville MSA and Tennessee state-wide.²³ Of note is Hickman's and Dickson's rate of change that *exceeded* Tennessee's state-wide rate during the most recent 5-year period.

In sum, WADC has failed to demonstrate that the proposed discharge to Lick Creek is necessary to accommodate important social and economic development in the Lick Creek area.

²⁰ *Ibid.*, Figure 6: Poverty Rate Across Counties, page 6.

²¹ *Ibid.*, Table 1: Growth in Business Establishments, page 8.

²² *Ibid.*, Table 2: Number of Firms with Over 100 Employees, page 8.

²³ *Ibid.*, Figure 9: Employment Change over 5-year Intervals, page 9.

WADC fails to consider all the socio-economic costs of its proposal, and its own Supplement shows that the Lick Creek area has been growing, socially and economically, without the EHWRP or its discharge.

III. WADC's Failed to Demonstrate that the Proposed Degradation Will Not Violate Water Quality Criteria for Existing Uses of Lick Creek

It should be noted that WADC has not specifically identified the degradation it will cause to Lick Creek with its proposed discharge. Without specifying the type of degradation it seeks to cause, WADC cannot and did not fully consider whether such degradation will violate water quality criteria for the existing uses of an Exceptional Tennessee Water.

In an attempt to justify the proposed discharge, the Authority submitted modeling to TDEC. However, there was no narrative, field data, or any support whatsoever for assumptions and values used in the model. In our attempt to obtain supporting information and field data, we were denied access or informed that WADC did not have such information. Therefore, we retained a consulting firm to complete a detailed evaluation of the modeling effort and are providing their report with this letter. That analysis shows that WADC's model used unrealistic and unsupported values and assumptions to try and demonstrate that dissolved oxygen stays just above the minimum criterion. Furthermore, it did not address the impacts of nutrients in the discharge and only considered average effluent quality. As described in our report, the discharge, as proposed, will not protect Lick Creek.

Finally, in its Supplement, WADC concludes that the proposed discharge will not impact the coppercheek darter, a state-listed (Threatened) species. However, WADC provides no support for this conclusion. As stated in Rule 0400-40-03-.06(4)(c)3, "an activity that would cause degradation of habitat above the level of de minimis will only be authorized if the applicant has demonstrated to the Department that there are no practicable alternatives to prevent or lessen degradation associated with the proposed activity, and the degradation is necessary to accommodate important economic or social development in the area and will not violate the water quality criteria for uses existing in the receiving waters." Without any basis for its finding that the coppercheek darter and its habitat will not be impacted, and especially without an alternatives analysis that would prevent or lessen the degradation, WADC has not met the requirements of this rule.

IV. Other Considerations

The enabling statute for the Authority, specifically Section 14 in Chapter 124 of the Private Acts of 1990, states: "The [A]uthority shall exercise its responsibilities and authorities within the entirety of the territory of Dickson County that has not been specifically designated by the County Executive as the service area of an existing utility district. Additionally, *the authority may adopt areas for service in surrounding counties where authorized by the appropriate utility officials and other officials in those counties.* In the event the assets of the authority are ever sold into private or investor ownership, the cash generated shall be divided

equally between the governments of the City of Dickson and Dickson County.” (emphasis added). WADC has failed to comply with its own enabling statute by not obtaining authorization from Hickman County to adopt this area for service.

Furthermore, WADC’s approach is extremely short-sighted. They claim in the Supplement that this a 75-year approach, but simply building a new facility is only a “band-aid” approach. By its own admission, WADC plans to reroute some existing flow from the Jones Creek plant to the Lick Creek plant when it is built. Instead, WADC needs to seriously consider a regional approach, as well as investing in water reclamation and reuse at its existing facilities.

V. Conclusion

WADC has wholly failed to meet the requirements of antidegradation review necessary for a new wastewater discharge to an Exceptional Tennessee Water. Not only has it failed to consider an appropriate range of alternatives to the proposed discharge of treated sewage effluent to Lick Creek and failed to show that degradation is necessary for social and economic development, but, as importantly, it is also relying on a tired strategy of discharging effluent to small streams instead of embracing long-range alternatives and combinations of innovative approaches (e.g., regional solutions such as a discharge to the Cumberland River, water reuse, and water reclamation). It also does not recognize the intrinsic social and economic value of Tennessee’s natural resources, undisturbed. Therefore, for all of the reasons outlined above, we respectfully request that the Department deny WADC’s permit for a new discharge to Lick Creek.

Yours truly,

BUTLER SNOW LLP

A handwritten signature in blue ink, appearing to read "B. Hart Knight", is written over a faint, light blue circular stamp or watermark.

B. Hart Knight
Katherine Barnes

KB/jgl

Enclosure

cc: Commissioner David Salyers, TDEC (*via email only*)

Jennifer Dodd, TDEC (*via email only*)

Stephanie Durman, Esq., TDEC (*via email only*)

David Jackson, BDY (*via email only*)

Glen Rohrbach, BDY (*via email only*)

J.W. Luna, Butler Snow (*via email only*)

Amanda Mathis (*via email only*)

Rodes Hart (*via email only*)

Pale Lilliput



Overview

The pale lilliput is a small freshwater mussel that historically occurred in river systems in northern Alabama and central Tennessee. Currently, populations of the pale lilliput are limited to the headwaters of the Paint Rock River system in northern Alabama and to Lick Creek, a tributary to the Duck River, in central Tennessee.

Scientific Name

Toxolasma cylindrellus

Common Name

pale lilliput, pale lilliput pearly mussel, Pale lilliput (pearlymussel)

FWS Category

Clams

Kingdom

Animalia (/species/animals-animalia)

Location in Taxonomic Tree ⓘ ()

Genus

↳ *Toxolasma* (/taxonomic-tree/20181)

Species

↳ *Toxolasma cylindrellus* (/taxonomic-tree/20183)

Identification Numbers

TSN: ⓘ ()

80361 (https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=80361)

Characteristics

HABITAT



Habitat

The pale lilliput historically occurred in a wide variety of habitats from small creeks to large rivers. However, it currently seems to persist only in headwater-sized streams usually in less than three feet of water, with sand and gravel substrates and where flows are slow to moderate (Parmalee and Bogan 1998; Williams et al. 2008).

River or Stream

A natural body of running water.

PHYSICAL CHARACTERISTICS



Size & Shape

This small freshwater mussel usually measures less than 1.7 inches (44 millimeters).

It is elongate and elliptical, becoming somewhat cylindrical in shape (Parmalee and Bogan 1998), with the female having an outline more oval in shape than that of the male.

The shell is moderately thin and somewhat compressed (Williams et al. 2008).

Color & Pattern

The shell is rayless with a tawny to yellowish green hue (Williams et al. 2008).

The nacre (inner shell layer) is often purple to coppery in color (Parmalee and Bogan 1998; Williams et al. 2008).

Reproduction

The species is a short-term brooder and is gravid from late summer or autumn into the following summer (Williams et al. 2008).

Suitable host fish include the Northern Studfish (*Fundulus caetenotus*), Southern Studfish (*Fundulus stellifer*) (although this species does not co-occur with the pale lilliput), Blackspotted Topminnow (*Fundulus olivaceus*), and Blackstripe Topminnow (*Fundulus notatus*) (Johnson 2018).

Females of the pale lilliput have been observed to migrate to the margins of streams when gravid which is thought to increase the likelihood of encountering a host fish.

Geography

Range

Historic Range - The pale lilliput historically occurred from the middle reaches of the Tennessee River system across northern Alabama and in the Duck River system in central Tennessee (Ortman 1924, Ortman 1925; Parmalee and Bogan 1998; Mirarchi 2004; Williams et al.).

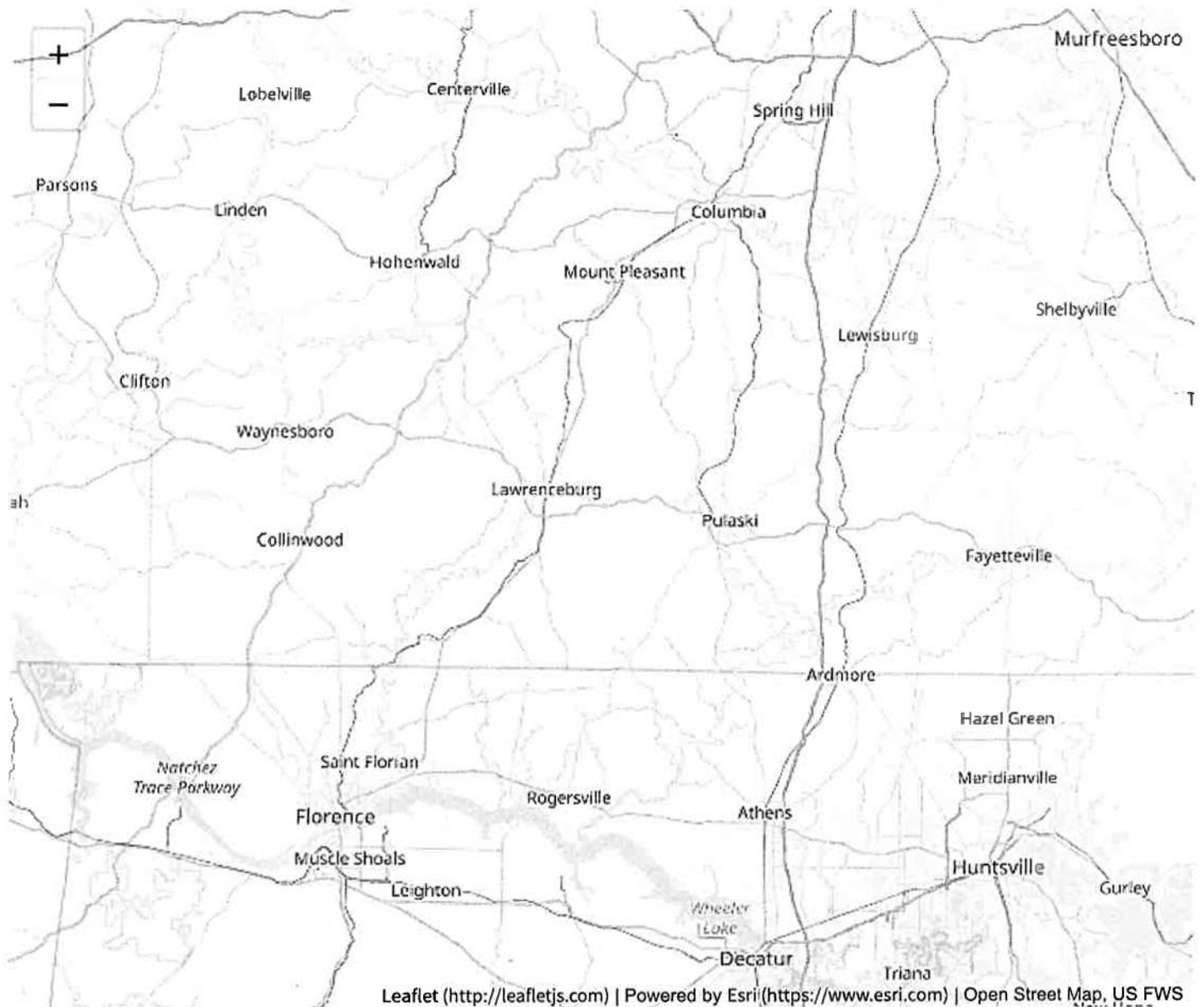
Current Range

Natural populations – It was previously considered extirpated from the Duck River (Ahlstedt et al. 2017); however, a population is now known to occur in Lick Creek, a tributary to the Duck River in Maury County, Tennessee. The only other known natural population for the pale lilliput is believed to be limited to the upper reaches of the Paint Rock River system in Jackson County, Alabama, and potentially in its headwaters in Franklin County, Tennessee (Parmalee and Bogan 1998).

Reintroductions – Since 2014, the Duck River has received over 3,500 lab-reared individuals, while the Paint Rock River has received approximately 3,600 (Johnson 2020). Additional stocking sites in the Elk River, Giles County, Tennessee; Bear Creek, Colbert County, Alabama; Big Rock Creek, Marshall County, Tennessee; and Lick Creek, Williamson County, TN, have received over 1,500 individuals (Hubbs 2019; Johnson 2020). Evidence of recruitment was documented in 2018 by the discovery of juvenile individuals in the vicinity of the stocking sites in the Duck River, Lick Creek, and Paint Rock River (P. Johnson pers. comm. 2018). Further

monitoring will be required to determine if the reintroduced populations have been successfully established and viable.

LAUNCH INTERACTIVE MAP (/SPECIES/PALE-LILLIPUT-TOXOLASMA-CYLINDRELLUS/MAP)



Timeline

Explore the information available for this taxon's timeline. You can select an event on the timeline to view more information, or cycle through the content available in the carousel below.

4 ITEMS



May 7, 2018

 Five Year Review (Information Solicitation)

5-Year Status Reviews for 35 Southeastern Species



Publication type: Notice

Population:

[VIEW FEDERAL REGISTER DOCUMENT \(/NODE/76158\)](#)

ITEM 4

Key:

 Event  Regulatory Status Change

Refine Your Search

Content Type

☐ Five Year Review

☐ Listing

☐ Recovery Plan

☐ Staff Profile

Filter By Publish Date

 Start Date



 End Date



Information & Media

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Pale Lilliput (*Toxolasma cylindrellus*) 5-Year Review: Summary and Evaluation
(/node/64548)

Five Year Review

Aug 31, 2011

Final



(/staff-
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padgett)

Erin Padgett (/staff-profile/erin-padgett)

Fish and Wildlife Biologist

Ecological Services

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Daphne, AL

Endangered Status for 159 Taxa of Animals; 41 FR 24062 24067 (/species-publication-action/endangered-status-159-taxa-animals-41-fr-24062-24067-112)

Listing

Jun 14, 1976

Final

CITES: Proposed Endangered Status for 216 Species on Convention Appendix I; 40 FR 44392 44333 (/species-publication-action/cites-proposed-endangered-status-216-species-convention-appendix-i-134)

Listing

Sep 26, 1975

Proposed

Pale lilliput (pearlymussel)(Toxolasma cylindrellus) 5-Year Review (/node/260283)

Five Year Review

Aug 31, 2011

Final

Pale Lilliput (Toxolasma cylindrellus) 5-Year Review: Summary and Evaluation 2021 (/node/264475)

Five Year Review

Sep 23, 2021

Final

Pale Lilliput Pearly Mussel (/node/68285)

Recovery Plan

Aug 22, 1984

Final

5-Year Status Reviews for 35 Southeastern Species ([/species-publication-action/5-year-status-reviews-35-southeastern-species-2](#))

Five Year Review

May 7, 2018

Notice

5-Year Status Reviews of 10 Southeastern Species; Notice of initiation of reviews; request for information ([/species-publication-action/5-year-status-reviews-10-southeastern-species-notice-initiation-7](#))

Five Year Review

Apr 9, 2010

Notice