TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AGENDA ITEM REQUEST

Consideration of Two Total Maximum Daily Loads for Adoption

AGENDA REQUESTED: May 18, 2022

DATE OF REQUEST: April 29, 2022

INDIVIDUAL TO CONTACT REGARDING CHANGES TO THIS REQUEST, IF NEEDED: Gwen Ricco, Texas Register/Agenda Coordinator, (512) 239-2678

CAPTION: Docket No. 2021-0634-TML. Consideration for adoption of Two Total Maximum Daily Loads for Indicator Bacteria in Sandy Creek and Wolf Creek, of the Neches River Basin, in Jasper and Tyler counties. (Kerry Niemann, Stefanie Skogen) (Project No. 2021-023-TML-NR)

Earl Lott

Director

Lori Hamilton

Division Deputy Director

Gwen Ricco

Agenda Coordinator

Texas Commission on Environmental Quality

Interoffice Memorandum

To: Commissioners **Date:** April 29, 2022

Thru: Laurie Gharis, Chief Clerk
Toby Baker, Executive Director

From: EL Earl Lott, Director
Office of Water

Docket No.: 2021-0634-TML

Subject: Two TMDLs for Indicator Bacteria in Sandy Creek and Wolf Creek for Adoption
Project No. 2021-023-TML-NR

Issue: Consideration for adoption of two Total Maximum Daily Loads (TMDLs) for indicator bacteria in Sandy Creek and Wolf Creek, of the Neches River Basin, in Jasper and Tyler counties. The impaired assessment units (AUs) are:

- Sandy Creek: 0603A_01
- Wolf Creek: 0603B_01

Background and Current Practice: Two TMDLs have been prepared as required by the federal Clean Water Act, §303(d). TMDLs must be submitted to the United States Environmental Protection Agency (EPA) for approval as certified updates to the State of Texas Water Quality Management Plan (WQMP). The draft TMDLs were proposed for a formal public review and comment period at a Texas Commission on Environmental Quality (TCEQ) commissioners' agenda on October 20, 2021. The public comment period ended on December 9, 2021. The Office of Water is now requesting that the commission consider adoption and certification of the final TMDLs as an update to the State of Texas WQMP. The commission adopted TMDLs are then forwarded to EPA for final action.

Comments on the TMDL Document: EPA did not provide any preliminary comments. TCEQ received no public comments during the comment period, which took place from November 5, 2021 through December 9, 2021 and resulted in no changes to the document.

Potential Controversial Concerns and Legislative Interest: There are no controversial concerns or legislative interest at this time.

Problem Definition: This project addresses elevated levels of indicator bacteria related to the primary contact recreation use in freshwater. The indicator bacteria for assessing the contact recreation use is *Escherichia coli* (*E. coli*) in freshwater. The geometric mean criterion is exceeded for the AUs addressed in the TMDLs.

Watershed Overview: The Sandy Creek watershed has a total drainage area of approximately 57 square miles and is located entirely in Jasper County. The Wolf Creek watershed has a total drainage area of approximately 83 square miles and is located entirely in Tyler County.

Endpoint Identification: The endpoint for the TMDLs is to maintain concentrations of *E. coli* below the geometric mean criterion of 126 colony forming units per 100 milliliters (cfu/100 mL) specified in the 2018 Texas Surface Water Quality Standards.

Source Analysis: Potential sources of impairment to Sandy Creek include a wastewater treatment facility (WWTF) outfall, stormwater discharges from industrial and concrete production facilities, sanitary sewer overflows, wildlife (avian and non-avian), unmanaged and feral animals, agricultural animals, agricultural activities, urban runoff not covered by a permit, failing on-site sewage facilities, and domestic pets. The same potential sources of impairment apply to Wolf Creek except WWTF outfalls are not present.

Linkage Analysis: Load duration curve (LDC) analysis was used to examine the relationship between instream water quality and the source of bacteria loads over a complete range of flow conditions (categorized as high flows, moist conditions, mid-range flows, dry conditions, and low flows). The LDC analysis showed that bacteria concentrations exceeded the geometric mean criterion most frequently in high flow conditions. The estimated maximum allowable load of *E. coli* for the AUs was determined using the median of the high flow regime, which is the flow regime requiring the highest load reduction.

Margin of Safety: The TMDLs covered by this report incorporate an explicit margin of safety (MOS) of 5% of the total TMDL allocation.

Wasteload Allocation: WWTFs permitted under the Texas Pollutant Discharge Elimination System within a TMDL watershed are allocated a daily waste load (WLA_{WWTF}) based on the full permitted flow of each facility. The City of Jasper WWTF is authorized to discharge wastewater with a domestic component into the Sandy Creek watershed. For Wolf Creek, the daily allowable loading of *E. coli* assigned to WLA_{WWTF} was determined to be zero because there are no WWTFs that discharge into the watershed. Seven industrial facilities and one concrete production facility discharge in the Sandy Creek watershed, but they do not include a domestic component in their discharges and are therefore not included in the WLA_{WWTF} allocation for the TMDL.

No municipal separate storm sewer system permits discharge in the watersheds. The total area of regulated stormwater for the TMDLs was calculated to provide a reasonable estimate of the portion of each watershed that may be subject to stormwater regulation at any given time. Regulated stormwater comprises only 0.24 square miles in the Sandy Creek watershed and 0.01 square miles in the Wolf Creek watershed.

Load Allocation: The load allocation (LA) component of the TMDLs corresponds to unregulated nonpoint source pollution runoff and is the difference between the total load from stormwater runoff and the portion allocated to the WLA_{SW} component.

Allowance for Future Growth: The future growth (FG) component of the TMDLs was based on population increase estimates and the existing full permitted discharge for the WWTF. This allocation will be provided for any new facilities that may be permitted or for any expansions to the existing facility.

TMDL Calculations: The final TMDL allocations needed to comply with the requirements of 40 Code of Federal Regulations §130.7 are presented in Table 1. The allocations in this table are based on the geometric mean criterion for *E. coli* (126 cfu/100 mL). Table 2 shows the allocations including the allowance for FG separated from the WLA_{WWTF}.

Table 1. Final TMDL Allocations (all loads expressed as billion cfu/day)

AU	TMDL	WLA_{WWTF}[a]	WLA_{SW}	LA	MOS
0603A_01	634.579	15.904	2.465	584.481	31.729
0603B_01	729.923	0.715	0.069	692.643	36.496

* $WLA_{WWTF} = WLA_{WWTF} + FG$

Table 2. Final TMDL Allocation Summary (all loads expressed as billion cfu/day)

AU	TMDL	WLA_{WWTF}	WLA_{SW}	LA	MOS	FG
0603A_01	634.579	15.501	2.465	584.481	31.729	0.403
0603B_01	729.923	0	0.069	692.643	36.496	0.715

Seasonal Variation: Seasonal differences in indicator bacteria concentrations were assessed by comparing *E. coli* data obtained from routine monitoring samples collected in the warmer months against those collected during the cooler months. This analysis indicated that there was a slight difference in concentrations in Sandy Creek, with cool season samples higher than warm season samples. There was no significant difference in concentrations between cool and warm weather seasons for Wolf Creek.

Public Participation: TCEQ and the Texas Water Resources Institute jointly coordinated public participation in the development of both the TMDL and its Implementation Plan (I-Plan). Public meetings have been held since 2019 to keep the public aware of the project and to engage their participation.

Implementation and Reasonable Assurance: I-Plans for Texas TMDLs use an adaptive management approach that allows for refinement or addition of methods to achieve environmental goals. This adaptive approach reasonably assures that the necessary regulatory and voluntary activities to achieve pollutant reductions will be implemented. Periodic, repeated evaluations of the effectiveness of implementation methods ascertain whether progress is occurring and may show that the original distribution of loading among sources should be modified to increase efficiency. I-Plans may be adapted as necessary to reflect needs identified in the evaluation of progress.

Key Points in the TMDL Adoption Schedule:
Texas Register publication date: November 5, 2021
Public meeting date: November 23, 2021
Public comment period: November 5 – December 9, 2021
Anticipated Adoption date: May 18, 2022

Agency Contacts:
Jazmyn Milford, Project Manager, Water Quality Planning Division, (512) 239-1524
Stefanie Skogen, Staff Attorney, (512) 239-0575
Gwen Ricco, Texas Register/Agenda Coordinator, (512) 239-2678

Attachments:
None

cc: Chief Clerk, 7 copies

Response to Preliminary EPA Comment:
Two Total Maximum Daily Loads for Indicator Bacteria in Sandy Creek and Wolf Creek

EPA submitted no preliminary comments.

Response to Public Comment:
Two Total Maximum Daily Loads for Indicator Bacteria in Sandy Creek and Wolf Creek

TCEQ received no comments from the public.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

A RESOLUTION adopting Two Total Maximum Daily Loads for Indicator Bacteria in Sandy Creek and Wolf Creek (Assessment Units 0603A_01 and 0603B_01) of the Neches River Basin, in Jasper and Tyler counties.
TCEQ Docket No. 2021-0634-TML
TCEQ Project No. 2021-023-TML-NR

WHEREAS, under 40 Code of Federal Regulations § 130.6, the State must ensure that State and areawide Water Quality Management Plans (WQMPs) together include all necessary plan elements and that such plans are consistent with one another;

WHEREAS, under Texas Water Code (TWC), § 26.037, the Texas Commission on Environmental Quality (Commission) is charged with the approval of WQMP updates;

WHEREAS, the TWC, § 5.122 allows for delegation of Commission authority to the Executive Director under certain terms and conditions;

WHEREAS, by resolution issued on February 18, 1999 (Resolution), the Commission authorized the Executive Director to approve WQMP revisions and updates;

WHEREAS, under the terms of the Resolution, the Commission may, in its discretion, choose to consider and approve or disapprove proposed revisions to the WQMP;

WHEREAS, the Executive Director has drafted two Total Maximum Daily Load (TMDLs) for indicator bacteria in Sandy Creek and Wolf Creek and presented them for the Commission's consideration;

WHEREAS, the Commission finds that the TMDLs for indicator bacteria in Sandy Creek and Wolf Creek comply with all state and federal laws and regulations and are consistent with all other parts of the Texas WQMP;

NOW, THEREFORE, it is resolved and ordered by the Commission that the TMDLs for indicator bacteria in Sandy Creek and Wolf Creek are adopted and shall be submitted to the United States Environmental Protection Agency for approval to be included in the Texas WQMP.

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

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Jon Niermann, Chairman

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Date Signed