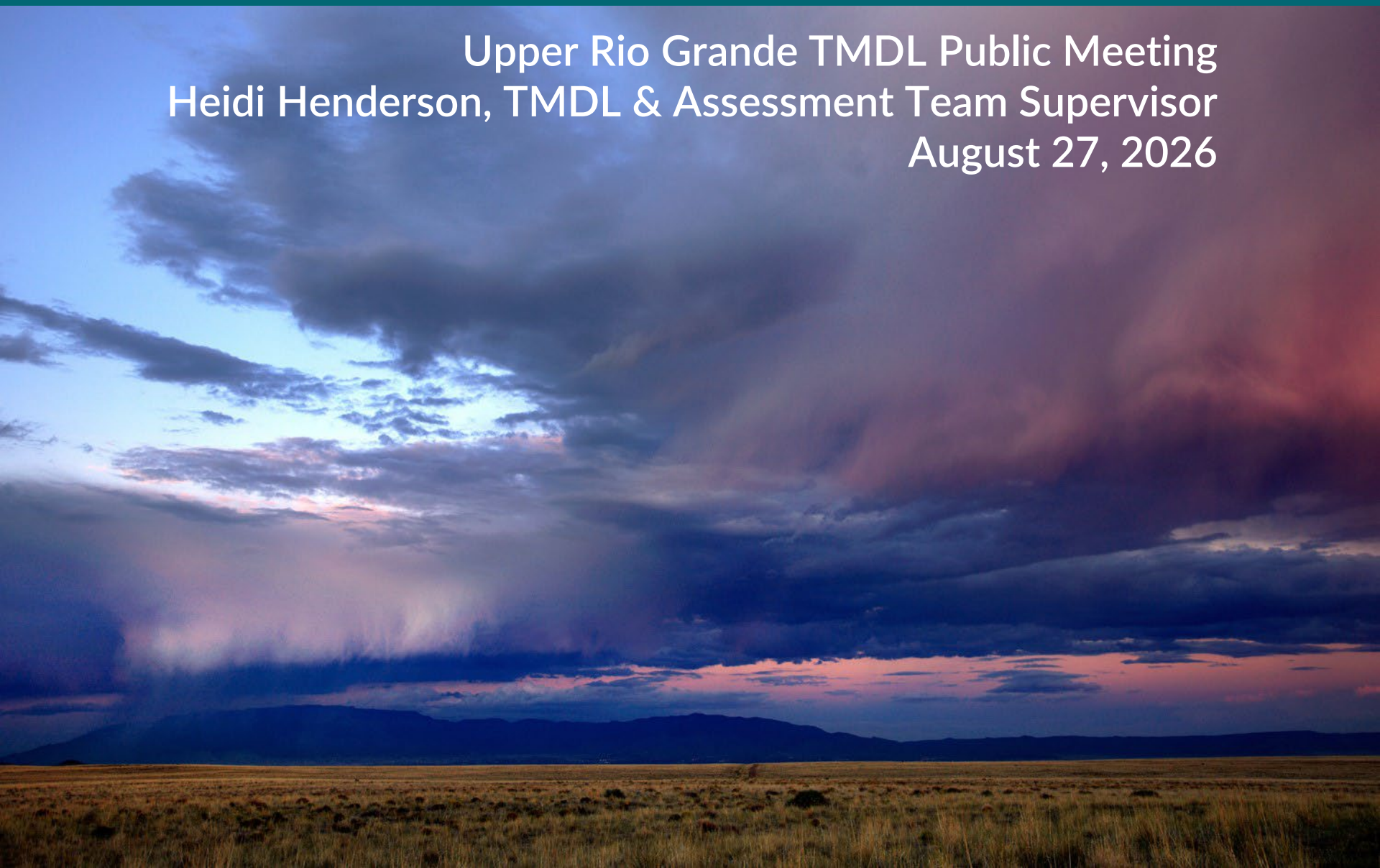




New Mexico Environment Department

Upper Rio Grande TMDL Public Meeting
Heidi Henderson, TMDL & Assessment Team Supervisor
August 27, 2026





Agenda

- Introductions
- Monitoring and Assessment Overview
- Total Maximum Daily Load (TMDL) Overview
- Rio Grande Watershed TMDLs
- Question and Answer plus Discussion



Introductions

- Heidi Henderson, TMDL and Assessment Team Supervisor
- Miguel Montoya, Monitoring Team Supervisor
- Jason Martinez, Permits & Certifications Team Supervisor
- Alan Klatt, Implementation & Restoration Team Supervisor
- Other NMED-SWQB staff
- Stakeholders

MONITORING & ASSESSMENT OVERVIEW



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Federal Clean Water Act (CWA)

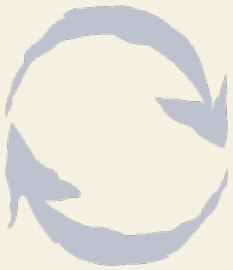
- The purpose of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” in order to reach a level of water quality that “provides for the protection and propagation of fish, shellfish, and wildlife, and provides for recreation in and on the water.” 33 U.S.C. § 1251(a).
- Section 303(d) of the CWA requires states to develop TMDLs. *See also* NMSA 1978, § 74-6-4(B).





Framework for Restoring Polluted Waters

Problem Identification



Problem Solving

Develop Water Quality Standards

Monitor and Assess Waterbodies

List Impaired Waters (303d list)

Develop TMDL

**Issue/Revise
Point Source Permits**

National Pollutant Discharge
Elimination System (NPDES)

**Minimize
Non-Point Sources**

Best Management Practices (BMPs)



Monitoring Surface Water Quality



Biological

- *Escherichia coli* (*E. coli*)
- Fish Assemblages
- Insect Assemblages

Chemical

- pH, DO, SC
- Ions, metals, organics
- Nutrients

Physical

- Channel morphology, substrate
- Flow measurements
- Temperature



Assessment of Water Quality Data

- How SWQB use monitoring data:
 - The Comprehensive Assessment and Listing Methodology (CALM) details the process used to determine if designated uses are being met
 - The CALM is reviewed and revised as needed every odd-numbered year
 - All submitted data that meet SWQB QA/QC quality requirements are assessed
- Information about data submittal:
www.env.nm.gov/surface-water-quality/data-submittals/



CWA 303(d)/305(b) Reporting

- When a water body meets water quality standards:
 - It is listed as Fully Supporting on 303(d)/305(b) List
 - It is delisted, if previously listed as impaired
- When a water body does not meet water quality standards:

The impairment is added or remains on the 303(d)/305(b) List, and SWQB:

- Collect additional data as needed to confirm
- Prioritize TMDL (or Advanced Restoration Plan) development
- Review and revise water quality standards if warranted



TMDL Overview





Total Maximum Daily Loads (TMDL)

- A **TMDL** is the maximum amount of a pollutant that can enter a stream without causing an impairment (exceedance of the water quality standard).

- **TMDL** = WQS x Critical Flow x CF
 - **WQS** = Water Quality Standard
 - **Critical Flow** = Low-flow critical condition for receiving-water flow
 - **CF** = conversion factor to a daily load





Total Maximum Daily Loads (TMDL)

A TMDL document is a water quality plan that establishes specific goals to meet water quality standards and includes*:

- Pollution reduction estimates; and
- Information and suggestions leading to the development of Watershed Based Plans which discuss control measures to protect the chemical, physical, and biological integrity of the waterbody.

*Per 40 CFR Part 30 and EPA Guidelines for Reviewing TMDLs Under Existing Regulations Issued in 1992



TMDL Allocations

$$\text{TMDL} = \text{LA} + \text{WLA} + \text{MOS}$$

(MOS is a margin of safety to account for uncertainty)

Load Allocation (LA) is pollution from any non-discrete source and is addressed through BMPs.



Waste Load Allocation (WLA) is pollution from a known, confined source and is controlled through NPDES permits.





Draft TMDL Review Process

- Reviewed by SWQB and EPA Region 6 staff prior to release of the public comment draft
- Released for a 30-day public comment period
- Stakeholders are notified of the draft TMDL and public meeting via GovDelivery (email list)
- SWQB hosts a public meeting
- Stakeholders can submit written comments
- SWQB responds to written comments in the Response to Comments appendix of the Final Draft TMDL





Final TMDL Approval Process

- Final Draft TMDL be presented to the New Mexico Water Quality Control Commission (WQCC)
- The WQCC-approved TMDL is incorporated into the NM Water Quality Management Plan and submitted to EPA Region 6 for final approval
- The EPA-approved TMDL is then posted to the SWQB TMDL website at: www.env.nm.gov/surface-water-quality/tmdl/





UPPER RIO GRANDE TMDLS



2026 Rio Grande TMDLs

Total Recoverable Aluminum Impairments

Rio de los Pinos (New Mexico reaches)

Rio Grande (Cochiti Reservoir to San Ildefonso bnd)

Rio San Antonio (CO border to Montoya Canyon)

E.Coli Impairments

Canada Tio Grande (Rio San Antonio to headwaters)

Rio Nutritas (Rio San Antonio to headwaters)



2026 Rio Grande TMDLs

Adjusted Gross Alpha Impairment

Rio Grande (Cochiti Reservoir to San Ildefonso bnd)

Plant Nutrient TMDLs (protective TMDLs)

Rio Hondo (South Fork Rio Hondo to Lake Fork Creek)

Rio Grande (Cochiti Reservoir to San Ildefonso bnd)

PCB Impairment

Rio Grande (Cochiti Reservoir to San Ildefonso bnd)



2026 Rio Grande TMDLs

Temperature Impairments

Beaver Creek (Rio de los Pinos to headwaters)

Canada Tio Grande (Rio San Antonio to headwaters)

Embudo Creek (Canada de Ojo Sarco to Picuris Pueblo bnd)

Embudo Creek (Rio Grande to Canada de Ojo Sarco)

Rio Fernando de Taos (Tienditas Creek to headwaters)

Rio Grande (Cochiti Reservoir to San Ildefonso bnd)

Rio Nutritas (Rio San Antonio to headwaters)

Rio San Antonio (CO border to Montoya Canyon)

Turbidity Impairment

Rio Grande (Cochiti Reservoir to San Ildefonso bnd)



Why is Aluminum a Concern?

Aluminum is:

- Naturally occurring and widely distributed in the earth's crust
- Occurs in environments contaminated by human activities, such as releases from coal-fired power plants



Elevated aluminum concentrations in water bodies may:

- Act as a toxic agent on gill-breathing animals such as fish
- Disturb root growth & function of plants in acidic soils



Aluminum Probable Sources

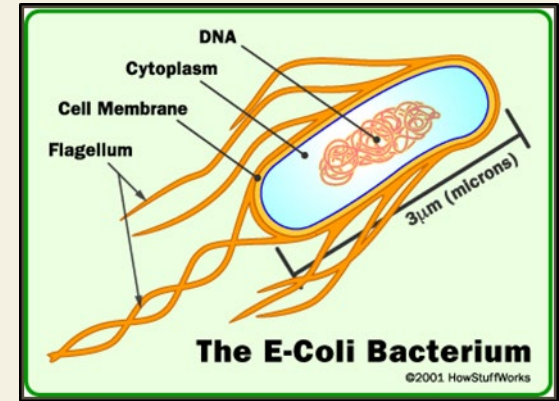
Assessment Unit	Probable Sources
Rio de los Pinos (New Mexico reaches)	Crop production, dams/diversions, flow alterations, rangeland grazing
Rio Grande (Cochiti Reservoir to San Ildefonso bnd)	Angling pressure, bridges/roads, dams/diversions, dispersed camping, flow alterations, garbage/trash, hiking trails, impervious pavement, rangeland grazing, residence/buildings, site clearance, stormwater, urban runoff, waste from pets, waterfowl, wildlife other than waterfowl
Rio San Antonio (CO border to Montoya Canyon)	Crop production, rangeland grazing, low water crossing, roads



What is *E. coli*?

***E. Coli* is:**

- Coliform bacteria are a group of organisms that are common in the environment
- Fecal coliform bacteria live in the intestines of humans and other warm-blooded animals, and may aid in the digestion of food
- The species *Escherichia coli* (*E. coli*) is used as an indicator of the presence of fecal coliforms



Why *E. Coli* is a concern:

- Fecal coliform indicates that the water has been contaminated with fecal material
- The water may be contaminated by disease-producing bacteria, viruses, or protozoans, which also exist in fecal material
- Some waterborne pathogenic diseases are typhoid fever, viral and bacterial gastroenteritis, and hepatitis A



E. Coli Probable Sources

Assessment Unit	Probable Sources
Canada Tio Grande (Rio San Antonio to headwaters)	Forest Roads, Grazing in Riparian Zone, Rangeland Grazing
Rio Nutritas (Rio San Antonio to headwaters)	Forest Roads, Grazing in Riparian Zone, Rangeland Grazing

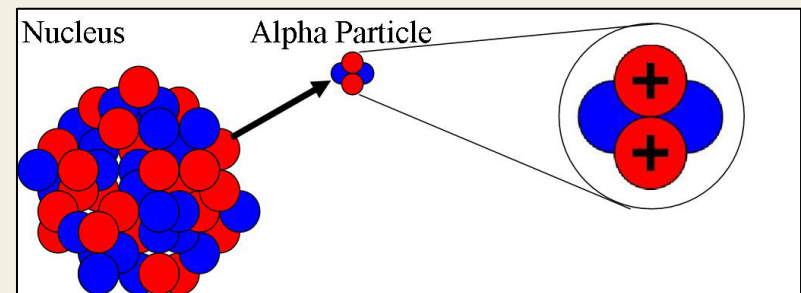


What is Gross Alpha

- A radionuclide is a radioactive form of an element with an unstable nucleus. Radionuclides can occur naturally in the environment and can also be from anthropogenic sources or produced as byproducts of nuclear reactions.
- Gross alpha is “the total amount of energy that is released from naturally-occurring radionuclides and some of the heaviest radioactive elements such as uranium, thorium, radium, lead, radon, and polonium as they breakdown or decay

Gross Alpha:

- Alpha emitters are used to treat cancer, as a static eliminator in paper mills and other industries, and in smoke detectors
- Radionuclides are known carcinogens and target the bone, liver, and reproductive organs





Gross Alpha Probable Sources

Assessment Unit	Probable Sources
Rio Grande (Cochiti Reservoir to San Ildefonso bnd)	Angling pressure, bridges/roads, dams/diversions, dispersed camping, flow alterations, garbage/trash, hiking trails, impervious pavement, rangeland grazing, residence/buildings, site clearance, stormwater, urban runoff, waste from pets, waterfowl, wildlife other than waterfowl



What are Plant Nutrients?

Plant nutrients are:

- The nutrients that limit plant growth are usually nitrogen (N) and phosphorus (P)
- Dissolved oxygen (DO) is correlated with nutrient levels



Excess nutrients can cause:

- Low dissolved oxygen, light limitation, changes in species composition, and mobility obstruction
- Nuisance odors and an unsightly appearance
- Can lead to algal blooms, which can produce toxins



Nutrient Probable Sources

Assessment Unit	Probable Sources
Rio Grande (Cochiti Reservoir to San Ildefonso bnd)	Angling pressure, bridges/roads, dams/diversions, dispersed camping, flow alterations, garbage/trash, hiking trails, impervious pavement, municipal point source discharge, rangeland grazing, residence/buildings, site clearance, stormwater, urban runoff, waste from pets, waterfowl, wildlife other than waterfowl
Rio Hondo (South Fork Rio Hondo to Lake Fork Creek)	Angling pressure, camping, crop production, dams/diversions, fire suppression, flow alterations, highway/road/bridge runoff, hiking trails, impervious surfaces, logging, municipal point source discharge, on-site treatment systems, rangeland grazing, residences/buildings, roads, trash/litter, waste from pets, waterfowl, wildlife other than waterfowl

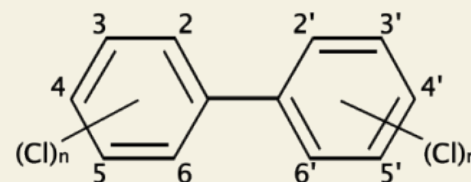


What are PCBs?

- Polychlorinated Biphenyls (PCBs) are a group of man-made chemicals that were manufactured from 1929 until their manufacture was banned in 1979.
- Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications

PCBs:

- Do not readily break down in the environment and can move through soil, air, and water for years
- Can accumulate in plants and bioaccumulate in fish
- Can have both carcinogenic and noncarcinogenic, such as neurological and reproductive, impacts on animals and humans





PCB Probable Sources

Assessment Unit	Probable Sources
Rio Grande (Cochiti Reservoir to San Ildefonso bnd)	Angling pressure, bridges/roads, dams/diversions, dispersed camping, flow alterations, garbage/trash, hiking trails, impervious pavement, municipal point source discharge, rangeland grazing, residence/buildings, site clearance, stormwater, urban runoff, waste from pets, waterfowl, wildlife other than waterfowl

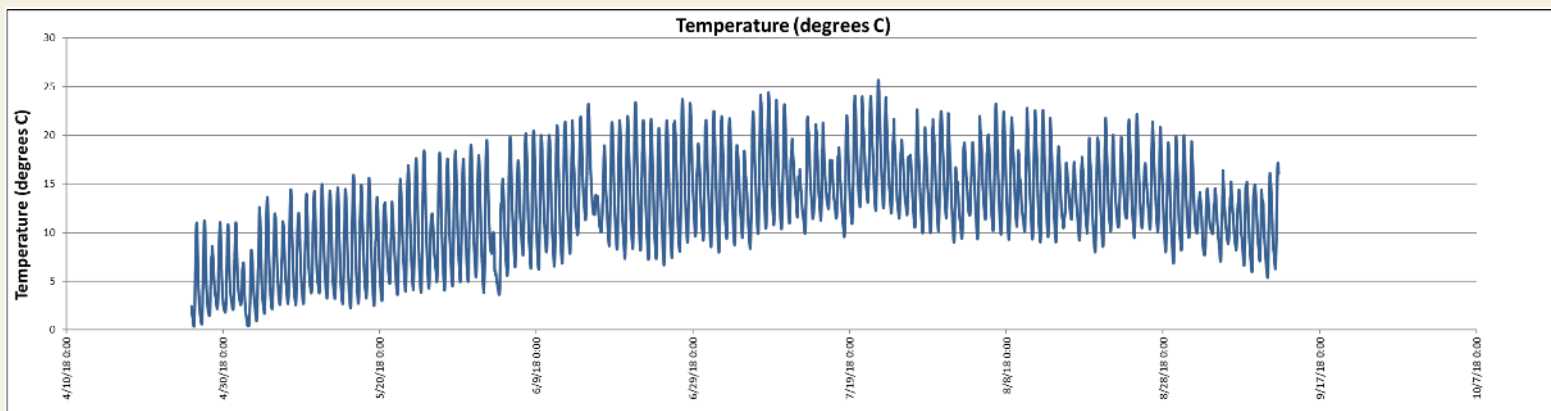


Why is Temperature a Concern?

Water temperature varies seasonally and throughout the day.

Temperature affects aquatic life by influencing:

- The amount of oxygen that can be dissolved in water
- The rate of photosynthesis of aquatic plants
- The rate of growth, reproduction and decomposition of aquatic life
- The sensitivity of organisms to toxic wastes, parasites and diseases





Temperature Probable Sources

Assessment Unit	Probable Sources
Beaver Creek (Rio de los Pinos to headwaters)	Forest Roads, Grazing in Riparian Zone, Other Recreational Pollution Sources, Rangeland Grazing
Canada Tio Grande (Rio San Antonio to headwaters)	Forest Roads, Grazing in Riparian Zone, Rangeland Grazing
Embudo Creek (Rio Grande to Picuris Pueblo bnd)	Angling pressure, channelization, crop production, dams/diversions, flow alteration, highway/road/bridge runoff, impervious pavement, on-site treatment systems, rangeland grazing, residence/buildings, roads, streambank modifications
Rio Fernando de Taos (Tienditas Creek to headwaters)	Channelization, crop production, dams/diversions, flow alteration, highway road/bridge runoff, hiking trails, impervious pavement, legacy logging, mass wasting, on-site treatment systems, rangeland grazing, residences/buildings, roads, waterfowl, wildlife other than waterfowl



Temperature Probable Sources

Assessment Unit	Probable Sources
Rio Grande (Cochiti Reservoir to San Ildefonso bnd)	Angling pressure, bridges/roads, dams/diversions, dispersed camping, flow alterations, garbage/trash, hiking trails, impervious pavement, rangeland grazing, residence/buildings, site clearance, stormwater, urban runoff, waste from pets, waterfowl, wildlife other than waterfowl
Rio Nutritas (Rio San Antonio to headwaters)	Forest Roads, Grazing in Riparian Zone, Rangeland Grazing
Rio San Antonio (CO border to Montoya Canyon)	Crop production, rangeland grazing, low water crossing, roads



What is Turbidity?

Turbidity is:

- A measurement of water clarity; the cloudiness or haziness of a liquid
- Caused by phytoplankton overgrowth or excess suspended solids

Excess turbidity can:

- Reduce the amount of light reaching lower depths in waterbodies
- Increase water temperature
- Inhibit growth of aquatic plants
- Harm fish and larvae





Turbidity Probable Sources

Assessment Unit	Probable Sources
Rio Grande (Cochiti Reservoir to San Ildefonso bnd)	Angling pressure, bridges/roads, dams/diversions, dispersed camping, flow alterations, garbage/trash, hiking trails, impervious pavement, municipal point source discharge, rangeland grazing, residence/buildings, site clearance, stormwater, urban runoff, waste from pets, waterfowl, wildlife other than waterfowl



TMDL Implementation

A TMDL is not a regulatory document, however, the loading calculations are used for the following:



1. Regulatory programs, such as the National Pollutant Discharge Elimination System (NPDES) permitting program administered for NM by EPA Region 6
2. Non-regulatory programs, such as Watershed Protection Programs (WPS) and Water Quality Improvement Projects (WQIP) using CWA §319(h) and 104(b)(3) grants and Clean Water State Revolving Fund loans



TMDL Implementation

Revise NPDES permits to meet TMDL loading requirements

Develop a Watershed Based Plan:

- Outline appropriate steps to achieve the loading defined in the TMDL, including potential solutions, such as Best Management Practices
- Focus on nonpoint sources of pollution and provide an opportunity for stakeholders to participate in community-based solutions towards improved water quality
- Implement on-the-ground projects to restore water quality





Current TMDL Public Comment Period

- The TMDL is available online at:
<https://www.env.nm.gov/surface-water-quality/tmdl/>
- The comment period for the Draft TMDL closes: September 14, 2026
- Written comments can be submitted via the NMED public comment portal: <https://nmed.commentinput.com/comment/search> or alternately:

<u>E-mail:</u>	<u>Mail:</u>	<u>Call:</u>
Heidi.Henderson@env.nm.gov	NMED-SWQB 1190 South St. Francis Drive P.O. Box 5469 Santa Fe, New Mexico 87502	505-819-9986



TMDL Next Steps

- SWQB will respond to written comments in the Final Draft TMDL
- SWQB plans to present the Final Draft TMDL to the WQCC (October 2026).
- SWQB will send the Final Draft TMDL to all commenters, as well as post it to the SWQB web site, at least 10 days prior to the WQCC meeting.



QUESTIONS?

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