# LCRA WATER QUALITY ADVISORY COMMITTEE MEETING

# MIDDLE COLORADO RIVER BASIN

May 23, 2024 | 9 a.m.

LCRA Redbud Center, 3601 Lake Austin Blvd, Room 108

and Microsoft Teams

## MEETING NOTES

### Welcome and Introductions

The Clean Rivers Program (CRP) meeting of the Middle Colorado River Basin Water Quality Advisory Committee (WQAC) was held May 23, 2024, at 9 a.m. via Microsoft Teams and in-person at the Lower Colorado River Authority Redbud Center. LCRA's Lisa Benton and Zoe Nichols welcomed the 32 in-person attendees and the 25 online attendees.

#### Stakeholder Affiliations

- Austin Youth River Watch
- Burnet County
- City of Austin
- City of Austin Watershed Protection Department
- City of Lago Vista
- City of Lakeway
- Colorado River Alliance
- Colorado River Watch Network
- Great Springs Project
- Keep Austin Beautiful
- LCRA Environmental Laboratory Services
- Llano River Watershed Alliance
- LOCOAL
- St. Edwards University
- Texas Department of Agriculture
- Texas Parks and Wildlife Department
- Texas State Soil and Water Conservation Board
- Travis County
- U. S. Geological Survey
- Upper Colorado River Authority

**Clean Rivers Program Updates for Colorado River Basin –** *Zoe Nichols, LCRA*

Nichols provided historical background information on the TCEQ-funded Clean Rivers Program. She discussed the importance of water quality monitoring, quality assurance, data management and how the Water Quality Advisory Committee helps guide resources to identify and address water quality issues throughout the basin.

The Colorado River basin CRP program has $909,212 allotted for the current fiscal year (FY) 2024-2025 budget cycle which is a $146,000 increase from the previous 2022-2023 contract. Approximately 76% of the funds in the contract with Texas Commission on Environmental Quality (TCEQ) are used for monitoring water quality and associated costs. Of the total CRP budget, 40% of the funds are contracted to the Upper Colorado River Authority (UCRA) for administering the CRP in the upper basin.

LCRA is considering using the additional funds in one or more of the following ways: 1) Aquatic Life Monitoring, 2) increase monitoring in high priority segments as identified in the Basin Summary Report and by stakeholders, 3) more in-depth investigation of existing impairments and concerns, 4) additional CRP water quality outreach and more meetings throughout the basin.

**Water Conservation and Drought –** *Michael Murphy, LCRA*

Murphy provided background on the Colorado River basin's historical environmental conditions with recurring cycles of droughts and floods. The Highland Lakes reservoirs, particularly lakes Buchanan and Travis, capture water during wet periods and store it for later use by people, businesses, and industries. Recent rainfall has raised storage in Buchanan and Travis to about 1.05 million acre-feet, or 53% of capacity, though both lakes remain below typical levels, indicating continued drought. Despite recent gains, inflows have been historically low, with 2022 and 2023 among the lowest on record.

The LCRA has a Drought Contingency Plan (DCP) with four stages progressively restricting water use:

Stage 1: Increased enforcement of twice-weekly watering schedule.

Stage 2: Maximum once-per-week watering schedule.

Stage 3: Automatic irrigation limited to six hours per week.

Stage 4: Handheld watering only for essential uses: foundations, trees, vegetable gardens.

The Water Conservation Plan (WCP) encourages water conservation through education, incentives, regulation, and research and verification. LCRA's water conservation incentive programs offer grants to customers and rebates to residents and commercial entities that

fulfill specific water efficient practices. Murphy highlighted the need for both conservation and new water sources to meet future needs.

**Colorado River Protections –** *Matt Hollon, City of Austin Watershed Protection Department*

Hollon explained that community members at a City Council meeting asked to strengthen Colorado River protections. According to the June 2022 Council resolution, the request was to "… evaluate the effectiveness of existing Critical Water Quality Zone and Erosion Hazard Zone buffers on the Colorado River downstream of the Longhorn Dam and to propose protections that will provide adequate protections to the river that will ensure a healthy riparian corridor to stabilize the riverbank and protect property from erosion."

The riverbanks along the lower Colorado River experience major erosion problems due to alluvial soils and river hydrology resulting in tens of millions of dollars in damage. The riparian zone was compromised by a long history of agriculture, sand and gravel mining, and the construction of the Highland Lakes which altered flow and sediment regimes. Additionally, urban development is increasing in this region at an accelerating rate. The existing protections are insufficient to prevent costly damage along the Colorado River.

The Draft Ordinance Proposal consists of expanding the 100-foot Erosion Hazard Zone (EHZ) buffer to 200 feet from the river's edge. The city also proposes new technical specifications for stormwater discharges to the river by building non-erosive structures to curb damage. Additionally, a fixed 400-foot Critical Water Quality Zone (CWQZ) buffer is proposed over the existing 200- to 400-foot CWQZ buffer.

**Get Fertilizer Wiser –** *Charlie Mossberger and Dr. David Thomason, St. Edward's University*

Mossberger explained the environmental impacts created from the overapplication of fertilizers. Excess nitrogen and phosphorous degrades Austin groundwater and enters water systems leading to harmful algal blooms. Landscaping with non-native plants and grasses requires more inputs, creating a greater strain on ecosystems and local resources.

The Get Fertilizer Wiser Initiative follows a six-step process:

> Step 1: Implement a voucher program that provides homeowners who follow this process with a voucher to replace non-native plants with native ones.
>
> Step 2: Homeowners watch an educational video on fertilizer use and native plants versus non-native plants and complete a preprogram survey on their planting, watering, and fertilizer habits.
>
> Step 3: $100 vouchers would be validated in local nurseries, supporting coverage of the expenses required for homeowners to make the switch to native and adaptive plants

Step 4: Vouchers will be redeemable at a variety of Austin's local nurseries.

Step 5: Homeowners complete a six-month follow-up survey with similar questions to the survey taken at the beginning of the program.

Step 6: Homeowners complete a survey one year later to evaluate the effects of Get Fertilizer Wiser and how people's habits change when educated and incentivized to act.

The Get Fertilizer Wiser Campaign will begin with canvassing St. Edward's neighborhoods to raise awareness of fertilizer overuse, leaving yard signs and collecting feedback via a questionnaire. Partnerships with local businesses and agencies will offer incentives for residents who complete educational content on issues like algal blooms, drought effects on Lake Travis, and sustainable landscaping practices. After initial outreach, the campaign will expand to other neighborhoods, continuing follow-up with homeowners to encourage long-term action.

**City of Austin *E. coli* trends –** *Andrew Clamann, City of Austin Watershed Protection Dept*

Clamann presented *E. coli* trends at Barton Springs and Bull Creek District Park. Barton Springs had four sampling locations (near main spring, north steps, near dam and below dam) and data used for *E. coli* trends were collected from 2003 to 2023. Bull Creek had two sampling locations (upstream and downstream), and data used for *E. coli* trends were collected from 2007 to 2023. The sample protocol was to collect water samples twice a week typically mid-morning. Samples were collected rain or shine, regardless of antecedent conditions.

Clamann presented a graph of Barton Spring samples collected near the diving board. The *E. coli* (100 MPN/100mL) rolling geomean from 2002 to 2023 remained below the contact recreation threshold of 126 MPN/100 mL. However, the Barton Springs samples collected downstream of the dam from 2014 to 2023 had a rolling geomean that exceeded the secondary contact recreation threshold of 206 MPN/100 mL seasonally.

In a similar fashion, he displayed the graph of the Bull Creek *E. coli* rolling geomean from 2007 to 2023. The rolling geomean for the downstream site near Lakewood Dr. exceeded the secondary contact recreation threshold from 2007 to 2009 and 2015 with a decreasing geomean over time. The upstream site near Loop 360 exceeded the secondary contact recreation threshold seasonally every year except for a decrease in geomean from 2021 to 2023.

From these trends, Clamann concluded seasonal differences are significant (most salient using geomean), sample regime (frequency, time of day, day of week, etc.) can limit analysis, and it is possible to have big differences over a short distance.

**Water Quality Permit Review Program –** *Susan Meckel, LCRA*

Meckel explained LCRA's review and response process for water quality permit applications. Application review considerations include the volume and quality of treated effluent, site specific considerations, cumulative impacts of multiple permits, precedence for additional permits to be approved with similar permit limits, and applicable rules and regulations. Any water quality or public concerns are communicated with the issuing agency and/or permittee. The draft permit can include protective terms and conditions or a settlement agreement to address concerns. An alternative step would be to submit formal comments and/ or participate in contested case hearing proceedings. Once the permit is approved, it is monitored for future activity.

Environmental impacts can be assessed using water quality data (ambient conditions, water chemistry concepts and water quality standards), aquatic-life use designation, modeling and expert professional judgement.

Current applications and permit renewals are:

- City of Marble Falls
- Village at Grape Creek
- Arch Ray Winery and Resort
- GigaTexas Stormwater Permits

Water quality monitoring is conducted throughout the basin by LCRA staff through the Clean Rivers Program and by volunteers through the Colorado River Watch Network.

**Water Quality Trends in Middle/Lower Colorado River Basin –** *Aaron Richter, LCRA*

Richter presented a series of maps showing water quality trends across the middle to lower Colorado River basin. He compared one map covered in active and proposed wastewater discharge locations to another map representing nitrate concentrations. Richter explained that the dots on the map represent water quality monitoring locations and the larger the dot, the greater the concentration of the nutrient. He highlighted the small dots scattered across Lake Travis indicating low nitrates while the dots downstream of Austin were much larger indicating high nitrate concentrations in the Colorado River. Phosphorus concentrations follow similar trends to nitrate concentrations. Richter displayed data from water quality monitoring sites around Austin, focusing on *E. coli* concentrations from 2000 to 2023 and more recent data from 2020 to 2023. Results indicated that while some sites have shown a decrease in *E. coli* levels over time, others have seen an increase.

Additionally, Richter presented Secchi disc depth measurements in the Colorado River from Lake Buchanan to Bastrop. A Secchi disc is a tool used to measure water clarity by lowering a black and white disc into the water until it is no longer visible; the depth at which

it disappears is recorded as the Secchi depth. Clearer water allows the disc to be seen at greater depths, resulting in a larger Secchi depth, while more turbid water leads to a smaller Secchi depth. The overall trend indicates an increase in Secchi depth—or clearer water—at most monitoring sites.

***Open Discussion:***

- Concerns were voiced by LCRA staff and multiple stakeholders in the meeting over increased nutrient trends in the lower Colorado River below Austin.
    - There are no standards established by TCEQ for nutrients; therefore, there are no nutrient impairments in rivers within the basin even if data is showing concerning trends. Stakeholders requested that in future meetings that a TCEQ official could present about water quality standards related to wastewater permits and be able to hear concerns and answer questions about non-degradation standards.
    - Stakeholders discussed additional efforts that can take place to help address nutrients, including: the potential for city ordinances to be created that aim to keep nutrients out of the lakes/waterways; landowner education on soil conservation, native plants and riparian health; regionalization of wastewater treatment plants and treatment to higher standards; and beneficial reuse of wastewater and tertiary treatment of effluent.