

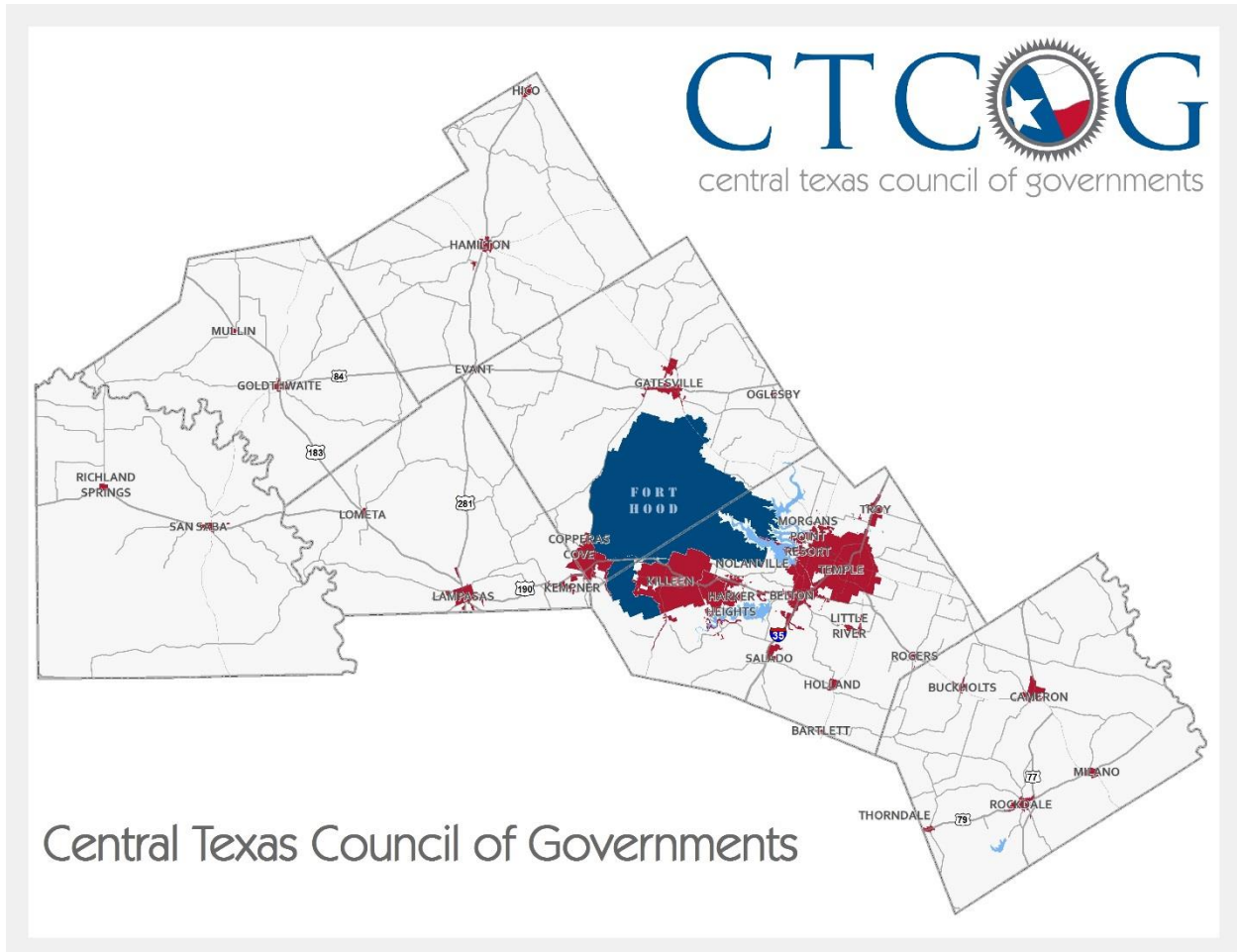


Central Texas Council of Governments
Water Quality Action and Outreach Plan
Fiscal Year 2021
Date: December 20, 2020

PREPARED IN COOPERATION WITH THE
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND
U.S. ENVIRONMENTAL PROTECTION AGENCY

CTCOG Region:

Located in Central Texas, the Central Texas Council of Governments (CTCOG) Region consists of Bell, Coryell, Hamilton, Lampasas, Milam, Mills and San Saba Counties and 32 cities. CTCOG’s mission is to help local communities work cooperatively to improve the conditions and well-being of the area’s population that would benefit from a more regional approach. Approximately 505,000 residents call the CTCOG region home.



The CTCOG region has a diverse range of water resources. Bell, Coryell, Milam, Hamilton, and parts of Lampasas Counties are located within the Brazos River Basin. San Saba and parts of Mills and Lampasas counties are within the Colorado River Basin. Major rivers that are located within the Brazos and Colorado River Basins include the Leon, Brazos, Colorado, and Lampasas Rivers. Major tributaries such as Nolan Creek, San Saba River, Cowhouse Creek and Little River feed into these major rivers. Major aquifers in the CTCOG region include the Trinity, Carrizo-Wilcox, and Edwards (BFZ).

Significant Water Quality Issues:

Section 303(d) of the Clean Water Act identifies rivers that have elevated levels of bacteria. Under Section 303(d), States are required to develop lists of impaired waters, prioritize them, and develop Total Maximum Daily Loads (TMDL). TMDL are the maximum amount of a pollutant that can be present in a water body and it still meet water quality standards. Some rivers in the CTCOG region are on the Section 303(d) list and actions are being taken through watershed protection plans to address these issues.

A majority of the Region's waterways are susceptible to nutrient enrichment and *E. coli* contamination. Nutrient enrichment contamination occurs when excess amounts of nutrients in a waterbody induce growth of algae, which results in oxygen being depleted. Nutrients are mainly composed of nitrogen and phosphorus that are found in fertilizers, septic tanks, and feedlots. When algae forms, it prevents the sun from reaching the bottom of the water body which can cause the native plants underneath the algae bloom to die. Over a period of time, algae will die, and bacteria will begin to decompose the algae. During decomposition, bacteria uses oxygen in the water which depletes the oxygen needed for aquatic plants and animals to live. Since there is no oxygen in the water, these aquatic plants and animals will die, and the water body can no longer support life.

E. coli contamination is another major concern for water pollution in the CTCOG region. *E. coli* in water may originate from birds, mammals, livestock, and human waste. Human waste may come from inadequately treated sewage or failing septic systems. When rainfall occurs, runoff picks up waste from birds, mammals, livestock, and improper disposal of human waste, causing rivers to be contaminated with *E. coli*. When contaminated water runs off into the streams, rivers and lakes, it can affect the water quality of those water bodies. Excess *E. coli* can affect the health of humans and wildlife who use the water as a resource.

CTCOG Activity Plan:

To raise awareness of water quality issues in the CTCOG region, CTCOG has developed the following public outreach campaigns.

CTCOG Water Quality Page:

In September 2017, CTCOG published a water quality web page. The web page contains information about the Water Quality Grant, the Clean Water Act, CTCOG water resources, regional watershed protection plans, best practices for water quality and for water conservation, non-point sources of pollution, household chemical disposal, lawn care, pet waste, littering, links to various agencies such as EPA, TCEQ, Texas Clean Rivers Program, and the Brazos River Authority. Throughout the year, CTCOG Staff will update the website, as necessary. The link to the webpage is provided below.

Link to website: <https://ctcog.org/regional-planning/water-quality/>

Water Quality Presentations:

CTCOG plans to educate the public through presentations to both school age children and adults. In the past, CTCOG has participated in community events that taught participants about various environmental

topics. CTCOG will incorporate water quality information into these presentations. CTCOG also plans to go to local schools and conduct classroom presentations on water quality. At both community events and classroom presentations, water quality information will be distributed and may include activity books, water quality test kits, story books, and information pamphlets.

List of Outreach and Education Materials:

Below is the list of outreach and education materials that CTCOG plans to use for selecting and distributing material this fiscal year. The outreach materials include information for adult persons in the region as well as items that can be purchased for municipalities to utilize in their own water quality efforts. Education materials are focused on literature, resources, and activities geared towards elementary aged kids to increase awareness and understanding of water quality issues in the region.

CTCOG Water Quality Outreach Materials List

- **EPA Surf Your Watershed**
 - Database outlining information about watersheds in Texas.
 - <https://cfpub.epa.gov/surf/state.cfm?statepostal=TX>
- **For Local Cities-Pick up Pet Waste Sign**
 - Sign to tell people to pick up pet waste in parks, schools, and communities.
 - <https://www.playgroundsigns.com/fos/Dog-Poop-Sign/Pet-Waste-Transmits-Disease-Sign/SKU-K-7339.aspx#K-0685>
 - Cost: \$24.15 per unit.
- **For Local Cities-Dog Waste Station:**
 - Station to provide bags for picking up dog waste.
 - <https://www.dogwastedepot.com/DOG-WASTE-STATION-with-ROLL-BAG-SYSTEM-Prodview.html>
 - 1 – 4 stations: \$229.99/unit
 - 5 – 9 stations: \$219.99/unit
 - 10+ stations: \$167.99/unit
- **For Local Cities-Dog Waste Bags:**
 - Bags for picking up dog waste.
 - <https://www.dogwastedepot.com/DOG-WASTE-BAGS-Prodlist.html>
 - 2,000 bags (10 per case): \$45.99
 - 4,000 bags (20 per case): \$88.99
 - 6,000 bags (30 per case): \$132.99
- **Do-It-Yourself Rain Barrel Kit**
 - Kit to convert any barrel/garbage can into a rain barrel.
 - <https://www.hayneedle.com/product/earthmindeddiyrainbarreldiverterandpartskit.cfm?type=child&tid=EART024-1>
 - \$31.06/unit.
- **TCEQ Build Your Own Rain Barrel**
 - Video on building your own rain barrel.
 - <https://www.youtube.com/watch?v=MBIqT94y5QI&feature=youtu.be>

- **TCEQ Water Quality Bookmarks**
 - 5 sets of bookmarks on proper disposal of food waste, pet waste, watershed protection, septic systems, and volunteering.
 - https://www.tceq.texas.gov/assets/public/comm_exec/pubs/gi/gi-443.pdf
- **Water Smart Landscaping Techniques**
 - Guides for xeriscaping and how to smartly use water outside your house
 - <https://www.epa.gov/sites/production/files/2017-01/documents/ws-outdoor-water-efficient-landscaping.pdf>
 - <https://www.epa.gov/sites/production/files/2017-12/documents/ws-commercialbuildings-waterscore-irrigation-landscape-guide.pdf>
- **EPA Homeowner's Guide to Septic Systems**
 - Short Version- https://www3.epa.gov/npdes/pubs/homeowner_guide_short.pdf
 - Long Version- https://www3.epa.gov/npdes/pubs/homeowner_guide_long.pdf
- **TCEQ Household Hazardous Waste Site**
 - TCEQ's information on HHW, disposal of HHW, managing HHW and other information.
 - <https://www.tceq.texas.gov/p2/hhw/hhw.html>

Take Care of Texas Materials

Website providing free outreach and informational materials on a variety of environmental topics including water quality. All bullets below are listed on the website with ID numbers in parentheses.

Link: <https://takecareoftexas.org/order-take-care-of-texas-publications>.

- **Clean Pipes are Green Pipes Brochure (GI-469)**
 - Brochure for conserving water and keeping pipes clean, available in English and Spanish.
- **Be Water Wise at Home Brochure (M-068)**
 - Brochure for conserving water and saving money around the house, available in English and Spanish.
- **Guide to Yard Care (GI-465)**
 - Guide to maintaining a healthy yard/landscape.
- **Water Recycles: The Complete Story Poster Activity (GI-403)**
 - Poster and activity book about the water cycle, water quality, water pollution etc. Available in Spanish and English (GI-403).

CTCOG Water Quality Education Materials List

- **Texas Water Development Board Kids Education Page:**
 - Games, posters, and interactive activities about the water cycle, watersheds, water use, surface water and groundwater, water treatment, and water conservation.
 - <https://www.twdb.texas.gov/conservation/education/kids/index.asp>
- **EPA's Lesson Plans, Teacher Guides and Online Resources for Educators.**
 - Database of lesson plans, activities and ideas on different environmental topics.
 - <https://www.epa.gov/students/lesson-plans-teacher-guides-and-online-resources-educators>

- **The Water Project’s List of Water Activities and Experiments for Elementary Students.**
 - Page with links to other websites for water activities and experiments regarding water geared towards elementary aged students.
 - https://thewaterproject.org/resources/elementary_activities
- **Elementary Education Watershed Field Trip Kit**
 - This fun, economical kit helps tell The Watershed Story, an excellent way to explain a watershed and how it relates to nature that students encounter every day. Teacher's manual provides guidelines on taking a field trip, conducting water quality tests, and data sheets for collection and interpretation of data. Designed for grades 1-5.
 - https://www.nature-watch.com/elementary-education-watershed-field-trip-kit-p-1791.html?cPath=160_208
 - \$92.95/unit
- **Just Understanding Groundwater (JUG) Science Kit**
 - Fun and educational aquifer science kit to construct your very own groundwater flow model. Experiments demonstrate contamination and cleanup, aquifer construction, water movement and pumping.
 - https://www.nature-watch.com/the-jug-just-understanding-groundwater-p-359.html?cPath=160_208
 - \$36.30/unit
- **WaterSafe All-In-One Test Kit for Classrooms**
 - Test Kit for bacteria, pesticides, nitrate, nitrite, chlorine, pH, and lead.
 - http://www.allergybegone.com/watersafe-all-in-one-test-kit.html?gclid=EAlaIQobChMIks7T-YCR1wIVhWF-Ch24ugxgEAKYASABEgIfzvD_BwE
 - Cost: 24.95/unit. (Sale: \$19.95, 2 or more: \$18.95 ea.)
- **Kids Can Compost Story Book**
 - Picture book that teaches children about composting.
 - <https://www.amazon.com/Kids-Compost-Wen-Chia-Tsai-Parker/dp/1451591845>
 - \$9.99/unit
- **Save Water Book**
 - Children’s book about where water comes from, how water can be polluted, and why we should save water. Includes tips about how to save water at home and encourages kids to think about conservation.
 - https://www.nature-watch.com/save-water-book-p-725.html?cPath=160_208
 - \$7.95/unit
- **The Water Beneath Your Feet Book**
 - Children’s book on groundwater topics such as how does water get into the ground, how does underground water end up in rivers, lakes, and oceans, how do people build wells to access groundwater, and how does groundwater bubble up to the surface to create an oasis in a hot, dry desert.
 - <https://bearportpublishing.com/shop/show/12032>
 - \$18.95/unit

Project WET Activity Booklets

Project WET Activity Booklets are STEM-based, field-tested booklets designed for kids ages 8 to 12. Featuring hands-on activities and games, these booklets have been tested by both educators and children and cover a range of water science topics, from oceans and coral reefs, to wetlands, recycling, and water conservation.

Link: https://www.nature-watch.com/project-wet-activity-booklets-p-1772.html?cPath=142_144

- Celebrate Wetlands – 470A (\$1.99/unit)
- Conserve Water – 470B (\$1.99/unit)
- Discovering Drought – 470D (\$1.99/unit)
- Discover Floods – 470F (\$1.99/unit)
- Discover Ground Water and Springs – 470G (\$2.25/unit)
- Discover Storm Water – 470M (\$1.99/unit)
- Healthy Water, Healthy People – 470P (\$1.99/unit)
- The Water Story – 470R (\$1.99/unit)
- Water, Every Drop Counts – 470V (\$1.99/unit)
- Watershed Protection – 470W (\$1.99/unit)

Conclusion:

Educating the public about water quality issues in our Region is the first step in improving our Region's water quality. CTCOG's water quality education and outreach program identifies actions that can be taken to improve water quality. By implementing these actions, we are making the water safe for everyone in our region to use and enjoy.