CHAPTER 2

AGENCY ACTIVITIES

FY 2023-FY 2024

Following rainfall, the desert comes alive with color as sagebrush and ocotillo bloom with the Chisos Mountains in the background. [Credit: iStock]

ENFORCEMENT

Compliance and Enforcement

In a typical year, TCEQ conducts about 100,000 routine investigations, including about 5,000 complaint investigations to assess compliance with environmental laws.

The TCEQ enforcement process begins when an investigation at a regulated entity's location or a record review at agency offices uncovers a violation, when staff reviews records at agency offices, or when a complaint from the public is verified by TCEQ to be a violation. Enforcement actions may also be triggered after the submission of citizen-collected evidence.

When environmental laws are violated, TCEQ has the authority in administrative cases to levy penalties up to the statutory maximum (up to $25,000 for some programs and in specific situations $40,000) per day, per violation. TCEQ can also refer cases to the Office of the Attorney General (OAG) for civil prosecution. These civil judicial cases also carry penalties of up to $25,000 per day, per violation.

In fiscal 2023, TCEQ issued 1,023 administrative orders in which respondents were assessed over $13.9 million in penalties and over $3.5 million for supplemental environmental projects (SEPs). The average number of days from the initiation of an enforcement action to its completion (order approved by the commission) was 351 days. Orders approved by the commission that have become effective are posted on TCEQ's website, as are pending orders not yet presented to the commission.

In fiscal 2023, the OAG obtained 19 judicial orders in cases referred by TCEQ or in which TCEQ was a party. These judgments resulted in more than $5.6 million in civil penalties. In fiscal 2022, 24 OAG judgements resulted in more than $6.8 million in civil penalties.

In fiscal 2024, TCEQ issued 1,075 administrative orders, which required payments of over $9.4 million in penalties and over $7 million for SEPs. The average number of days from the initiation of an enforcement action to its completion was 528 days.

In fiscal 2024, the OAG obtained 14 judicial orders in cases referred by TCEQ or in which TCEQ was a party. These judgments resulted in more than $84.6 million in civil penalties.

You can find additional enforcement statistics in TCEQ's annual enforcement report (www.tceq.texas.gov/goto/aer).

Supplemental Environmental Projects

Rather than being assessed a monetary penalty, regulated entities may be able to direct some of their penalty dollars towards a supplemental environmental project (SEP) that would be beneficial for the community where their environmental offense occurred. Such a project must reduce or prevent pollution, enhance the environment, or raise public awareness of environmental concerns.

Table 1. TCEQ Enforcement Orders

Fiscal Year	Number of Orders	Assessed Penalties	Orders with SEPs	SEP Funds
2021	1,006	$11.7 million	139	$2.4 million
2022	1,038	$12.9 million	139	$2.8 million
2023	1,023	$13.9 million	144	$3.5 million
2024	1,075	$18.7 million	189	$7.0 million

A regulated entity that meets program requirements may propose a SEP from TCEQ's list of preapproved projects or a custom SEP if the proposed project is environmentally beneficial and the party that would be performing the project was not already obligated or planning to perform the activity before the violation occurred. Additionally, the activity covered by a SEP must go beyond what is already required by state and federal environmental laws.

By proposing a compliance SEP, local governments cited in enforcement actions may use SEP money to achieve compliance with environmental laws or to remediate the harm caused by the violations in the case. TCEQ may offer this option to governmental authorities such as school districts, counties, municipalities, and water districts.

Except for a compliance SEP, a SEP cannot be used to remediate a violation or any environmental harm that is caused by a violation, or to correct any illegal activity that led to an enforcement action.

Compliance History

Each year, TCEQ rates the compliance history of every facility owner or operator that is regulated under certain state environmental laws. An evaluation standard has been used to assign a rating to approximately 460,000 entities regulated by TCEQ that are subject to the compliance history rules. The ratings take into consideration prior enforcement orders, court judgments, consent decrees, criminal convictions, and notices of violation, as well as investigation reports, notices, and disclosures submitted per the Texas Environmental, Health, and Safety Audit Privilege Act.

Agency-approved environmental management systems and participation in agency-approved voluntary pollution-reduction programs are also considered.

You can find more information about the compliance process at TCEQ's Compliance History webpage (www.tceq.texas.gov/goto/history).

Table 2. Compliance-History Designations

Classification	September 2021		September 2022		September 2023		September 2024	
	# Entities	%	# Entities	%	# Entities	%	# Entities	%
High	39,224	8.9%	38,690	8.3%	40,489	8.6%	40,550	8.08%
Satisfactory	8,471	1.9%	8,656	1.9%	8,652	1.9%	8,568	1.71%
Unsatisfactory	961	0.2%	967	0.2%	962	0.2%	746	0.15%
Unclassified	389,970	89.0%	418,967	89.76%	418,132	89.3%	451,956	90.06%
Total	**438,626**		**467,280**		**468,235**		**501,820**	

Compliance History Rule Update

Over the past few years, several large emergency industrial accidents have caused significant impacts to public health and the environment. As a result of these accidents, the commission approved a revision to the compliance history rules. The executive director may now initially designate a site's compliance history classification as "under review" and then later reclassify it to "suspended" if a significant emergency event at the site necessitates immediate response.

This could include major explosions or fires that cause significant community disruption or the commitment of emergency response resources by federal or state governmental authorities. This is codified in Title 30, Texas Administrative Code, Section 60.4 and went into effect on June 23, 2022.

Critical Infrastructure

The Critical Infrastructure Division (CID) oversees elements that are critical to TCEQ's responsibilities under the Texas Homeland Security Strategic Plan. The division seeks to ensure that regulated critical infrastructures—essential to the state and its residents—maintain compliance with environmental regulations, and supports these critical infrastructures during disasters. Support during disasters includes not only responding to disasters, but also aiding in recovery from them.

In fiscal 2023 and fiscal 2024, CID's programs included: Homeland Security, Dam Safety, Radioactive Materials Compliance and Chemical Reporting, Emergency Management Support, and Emissions Event Review.

Homeland Security

The Homeland Security Program coordinates communications with federal, state, and local partners during disaster response; conducts assessments of threats to the state's critical infrastructure; and participates in the state's counterterrorism task forces. The program provides agency representation at the State Operations Center during disasters and reviews, and provides input on statewide plans coordinated by the Texas Division of Emergency Management and the Texas Department of Public Safety.

Dam Safety

The Dam Safety Program monitors and regulates private and public dams in Texas. The program periodically inspects dams that pose a high or significant hazard, and issues recommendations and reports to the dam owners to help them maintain safe facilities. The program ensures that these facilities are constructed, maintained, repaired, or removed safely. High or significant hazard dams are those whose failure could cause loss of life.

Dams are exempted from the program's regulation if they meet all the following criteria:

- Are privately owned.
- Are classified either "low hazard" or "significant hazard."
- Have a maximum capacity of less than 500 acre-feet.
- Are within a county with a population of less than 350,000.
- Are outside city limits.

In fiscal 2024, a total of 3,235 dams were exempted.

In fiscal 2023, Texas had 4,107 state-regulated dams, including 1,526 high-hazard dams and 307 significant-hazard dams. The remaining dams were classified as low hazard. In fiscal 2024, Texas had 4,119 state-regulated dams, including 1,542 high-hazard dams and 306 significant-hazard dams.

In fiscal 2023, 77% of all high and significant-hazard dams had been inspected during the past five years. In fiscal 2024, 78% of all high and significant-hazard dams had been inspected during the past five years. About 378 of the inspected dams were in either "fair" or "poor" condition. After inspections, many dam owners make repairs if they can identify a funding source.

Radioactive Materials Compliance and Chemical Reporting

Radioactive Materials Compliance Program

This program focuses on the safety and security of radioactive waste in Texas. Investigators conduct radioactive materials compliance inspections statewide and are members of the state radiological emergency response team. The investigators are responsible for inspections at regulated facilities including those that mine or recover uranium, those that process or store waste, those that handle or dispose radioactive by-products, those that dispose low-level radioactive waste, and Underground Injection Control (UIC) permit sites. In fiscal 2023, 19 radioactive material license inspections and 2 UIC permit inspections were conducted and approved. In fiscal 2024, 8 radioactive material license inspections and 2 UIC permit inspections were conducted and approved.

Texas Compact Waste Facility

The Radioactive Materials Compliance Program is responsible for compliance at the disposal site for low-level radioactive waste in Andrews County. Waste Control Specialists LLC (WCS) operates the Texas Compact Waste Facility under TCEQ-issued Radioactive Material License R04100 and was authorized to accept radioactive waste for disposal in April 2012.

The Radioactive Materials Compliance Program maintains two full-time resident inspectors at the WCS site to inspect and approve the disposal of each waste shipment. In fiscal 2023, 274 shipments of low-level radioactive waste were inspected and successfully disposed of in the Texas Compact Waste Facility. In fiscal 2024, 213 shipments were inspected and successfully disposed of in the Texas Compact Waste Facility.

Tier II Chemical Reporting Program

The Texas Tier II Chemical Reporting Program is the state repository for hazardous chemical inventories—called Texas Tier II reports—which are required under the Emergency Planning and Community Right-to-Know Act.

Texas Tier II reports contain detailed information on chemicals that meet or exceed specified reporting thresholds at any time during a calendar year. The Tier II reporting system identifies facilities and owner-operators and collects detailed data on hazardous chemicals stored at reporting facilities within the state. In fiscal 2023, 8,832 reports with 82,830 facility reports were received in the online reporting system. In fiscal 2024, 8,793 reports with 84,744 facility reports were received in the online reporting system.

Emergency Management Support

TCEQ's 16 regional offices form the basis of the agency's support for local jurisdictions addressing emergency and disaster situations. During a disaster, disaster-response strike teams (DRSTs), organized in each regional office, serve as TCEQ's initial and primary responders within their respective regions. Team members come from various disciplines and have been trained in the National Incident Management System, Incident Command System, and TCEQ disaster-response protocols.

TCEQ's Emergency Management Support Team (EMST), based in Austin, joins the regional DRSTs during disaster responses. The EMST is also responsible for maintaining preparedness, assisting with developing the DRSTs in each region by providing disaster preparedness training, and maintaining sufficiently trained personnel so that response staff can rotate during long-term emergency events.

The EMST also coordinates the BioWatch program, a federally funded initiative aimed at early detection of bioterrorism agents.

Emissions Event Review Program

TCEQ's Emissions Event Review Program was established Sept. 1, 2022. The program investigates all reported emissions events; maintenance, startup, or shutdown; and opacity events in the state. This centralized approach improves investigative consistency across all regions and industrial sectors, and allows for greater efficiency by having staff dedicated to specific types of investigations. The teams within the section are divided into specific

industry sectors including petrochemical (examples: chemical plants, refineries), oil and gas, and other sources (example: carbon black). The centralized approach also helps ensure that there is clear guidance for evaluating affirmative defense claims, and an agency-wide approach to provide transparent and consistent evaluations.

Accredited Laboratories

TCEQ only accepts regulatory data from laboratories accredited according to standards set by the National Environmental Laboratory Accreditation Program (NELAP) or from laboratories exempt from accreditation, such as a facility's in-house laboratory.

The analytical data produced by these laboratories are used in TCEQ decisions relating to permits, authorizations, compliance actions, enforcement actions, and corrective actions, as well as in characterizations and assessments of environmental processes and conditions.

All laboratories accredited by TCEQ are held to the same quality control and quality assurance standards. TCEQ laboratory accreditations are recognized by other states using NELAP standards and by some states that do not operate accreditation programs of their own.

In fiscal 2023, there were 251 laboratories and in fiscal 2024, there were 245 laboratories accredited by TCEQ.

Sugar Land Laboratory

The TCEQ Sugar Land Laboratory is accredited by NELAP. The laboratory:

- Supports monitoring operations for TCEQ's air, water, and waste programs, as well as river authorities and other environmental partners, by analyzing samples of surface water, wastewater, sediments, sludge, and airborne particulates.
- Develops analytical procedures and performance measures for accuracy and precision.
- Maintains a highly-qualified team of analytical chemists, laboratory technicians, and technical support personnel.
- Generates scientifically valid and legally defensible test results under its NELAP-accredited quality system.

Analytical data are produced using methods approved by EPA. The standards used for these methods are traceable to national standards, from institutions such as the National Institute of Standards and Technology and the American Type Culture Collection.

Edwards Aquifer Protection Program

As a karst aquifer, the Edwards Aquifer is one of the most permeable and productive groundwater systems in the U.S. The regulated portion of the aquifer crosses eight counties in south central Texas, serving as the primary source of drinking water for more than 2 million people in the San Antonio area. This replenishable system also supplies water for farming, ranching, manufacturing, mining, recreation, and the generation of electric power using steam.

The aquifer's pure spring water also supports a unique ecosystem of aquatic life, including several threatened and endangered species.

Because of the unusual nature of the aquifer's geology and biology, TCEQ requires an Edwards Aquifer protection plan for any regulated activity proposed within the recharge, contributing, or transition zones. Regulated activities include construction, clearing, excavation, or anything that alters the surface or possibly contaminates the aquifer and its surface streams. In regulated areas, best management practices for treating stormwater are mandatory during and after construction.

Each year, TCEQ receives hundreds of plans that its Austin and San Antonio regional staff review. TCEQ reviewed 782 plans in fiscal 2023 and 699 plans in fiscal 2024.

In addition to reviewing plans for development within the regulated areas, agency personnel conduct compliance investigations to ensure that best management practices are appropriately used and maintained. Staff also performs site assessments before the start of regulated activities to ensure that aquifer-recharge features are adequately identified for protection.

AIR QUALITY

Changes to Standards for Criteria Pollutants

Federal clean-air standards, or the National Ambient Air Quality Standards (NAAQS), cover six criteria air pollutants: ozone, particulate matter (PM), carbon monoxide, lead, nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). The federal Clean Air Act (FCAA) requires EPA to review the standard for each criteria pollutant every five years to ensure that it achieves the required level of health and environmental protection.

- On March 18, 2019, EPA published its decision to retain the current NAAQS for SO_2 without revision, effective April 17, 2019.
- On Aug. 21, 2023, EPA announced a new review of the ozone NAAQS, stating that it will incorporate information, advice, and recommendations gathered during reconsideration of the 2020 ozone NAAQS for this new review. EPA's 2020 decision to retain the 70 parts per billion (ppb) will remain unchanged.
- On Feb. 7, 2024, EPA published its decision to lower the primary annual NAAQS for fine particulate matter ($PM_{2.5}$) NAAQS from 12.0 to 9.0 micrograms per cubic meter (µg/m3). EPA retained the 24-hour $PM_{2.5}$ NAAQS and the coarse particulate matter (PM10) NAAQS without changes.
- On April 15, 2024, EPA published a proposal to revise the secondary NAAQS for SO_2 and to retain the secondary NAAQS for NO_2 and PM. EPA proposed to revise the existing secondary 3-hour SO_2 standard to an annual standard of 10-15 ppb, averaged over three years. All areas of Texas are currently below this range. The final rule is expected in December 2024.
- EPA is in the process of reviewing the current NAAQS for lead with a proposed rule anticipated in early 2025 and a final rule in early 2026.

As TCEQ develops plans to address air quality issues, it revises the State Implementation Plan (SIP) and submits these revisions to EPA.

2024 $PM_{2.5}$ Standard

States are required to submit their designations on the revised annual $PM_{2.5}$ standard to EPA by Feb. 7, 2025. Initial state designations will be based on ambient monitoring data from 2021 through 2023. Based on 2023 data, 10 counties exceed the 9.0 µg/m3 standard: Bowie, Cameron, Dallas, Hidalgo, Harris, Harrison, Kleberg, Tarrant, Travis, and Webb. EPA's nonattainment designations are expected to be based on ambient monitoring data from 2022 through 2024 and finalized in early 2026. In October 2025, prior to finalizing designations, EPA is expected to notify states of its proposed designations and provide states an opportunity to revise their initial designations based on 2022 through 2024 data.

All states are required to submit SIP revisions to EPA to address FCAA infrastructure and transport provisions by Feb. 7, 2027. Based on EPA's current designations schedule, SIP revisions for nonattainment areas would be due to EPA in September 2027, and nonattainment areas would be required to meet the standard by December 2032.

Northern cardinal perched on a tree branch. [Credit: iStock]

Table 3. Ozone-Compliance Status for the 2008 Eight-Hour Standard

Area of Texas	Classification	Attainment Deadline
HGB (eight-county area)	Severe Nonattainment	July 20, 2027
DFW (10-county area)	Severe Nonattainment	July 20, 2027
All Other Texas Counties	Attainment/Unclassifiable	Not Applicable

Note: The HGB 2008 ozone nonattainment area comprises the counties of Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller. The DFW 2008 ozone nonattainment area comprises the counties of Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise.

Ozone Standards

2008 Ozone Standard

On May 21, 2012, EPA published final designations for the 2008 eight-hour ozone standard of 0.075 parts per million, which included a 10-county Dallas-Fort Worth (DFW) nonattainment area and an eight-county Houston-Galveston-Brazoria (HGB) nonattainment area. Both nonattainment areas were reclassified as "serious" effective Sept. 23, 2019, and both failed to attain by the end of 2020 to meet the July 20, 2021, attainment date for serious areas. SIP revisions to meet serious classification requirements were developed for both areas and submitted to EPA before the Aug. 3, 2020, deadline.

On Oct. 7, 2022, EPA published notice to reclassify both the DFW and HGB areas to "severe." TCEQ submitted severe classification SIP revisions for the DFW and HGB areas on May 7, 2024. Attainment for the DFW and HGB areas is required by the end of 2026 to meet the July 20, 2027, attainment date for severe areas.

Under the severe classification, TCEQ is required to submit rules to EPA to address the penalty fee provision under Section 185 of the FCAA for the DFW and HGB areas by Nov. 7, 2025. The fees would be assessed for major stationary sources and would only be required if the areas fail to meet the July 20, 2027, attainment date. TCEQ is scheduled to propose rulemaking to address the Section 185 fee requirement in April 2025.

On Oct. 3, 2023, EPA published final disapproval of contingency measures for the DFW and HGB 2008 ozone standard serious nonattainment areas, submitted in 2020 to meet serious classification SIP requirements. The disapproval is in response to the 2021 court ruling that vacated provisions allowing for the use of previously implemented measures as contingency measures. Effective Nov. 2, 2023, the action started a sanctions clock (18 months) and federal implementation plan (FIP) clock (24 months).

2015 Ozone Standard

Background

In October 2015, EPA finalized the 2015 eight-hour ozone standard of 0.070 parts per million. On Nov. 16, 2017, EPA designated a majority of Texas as "attainment/unclassifiable" for the 2015 ozone standard, effective Jan. 16, 2018. On June 4, 2018, EPA published final designations for a nine-county DFW marginal nonattainment area and a six-county HGB marginal nonattainment area. EPA designated all the remaining counties, except those in the San Antonio area, as attainment/unclassifiable. The designations were effective Aug. 3, 2018.

San Antonio Area

On July 25, 2018, EPA designated Bexar County as nonattainment and the seven other San Antonio area counties—Atascosa, Bandera, Comal, Guadalupe, Kendall, Medina, and Wilson—as attainment/unclassifiable, effective Sept. 24, 2018.

On June 10, 2020, the commission adopted an emissions inventory SIP revision for the 2015 ozone standard for the HGB, DFW, and Bexar County nonattainment areas. TCEQ submitted it to EPA on June 24, 2020. EPA published final approval of the emissions inventories for the HGB, DFW, and Bexar County areas on June 29, 2021, and published final

approval of the nonattainment new source review and emissions statements portions of the SIP revision on Sept. 9, 2021.

On July 1, 2020, the commission adopted the FCAA, Section 179B, demonstration SIP revision to demonstrate that the Bexar County marginal nonattainment area would attain the 2015 ozone standard by its attainment deadline were it not for anthropogenic emissions emanating from outside the U.S. TCEQ submitted it to EPA on July 13, 2020.

DFW, HGB, and Bexar County Areas Status

The DFW and HGB 2015 ozone standard nonattainment areas failed to attain by the end of 2020 to meet the Aug. 3, 2021, attainment date for marginal areas, and the Bexar County nonattainment area failed to meet its Sept. 24, 2021, deadline. On Nov. 7, 2022, EPA reclassified the DFW, HGB, and Bexar County areas to moderate and disapproved the Bexar County 179B Demonstration SIP Revision. Attainment for all three areas was required by the end of 2023 to meet the Aug. 3, 2024, attainment date for the DFW and HGB areas and the Sept. 24, 2024, attainment date for the Bexar County area.

As required by the FCAA for new moderate nonattainment areas, TCEQ submitted a SIP revision to EPA on Dec. 18, 2023, that implements a vehicle inspection and maintenance (I/M) program in Bexar County. The Bexar County I/M program is scheduled to start on Nov. 1, 2026.

On Oct. 12, 2023, Governor Abbott signed and submitted a letter to the EPA Administrator to reclassify the three 2015 ozone standard nonattainment areas from moderate to serious. On Oct. 18, 2023, EPA published a finding of failure to submit for 11 states, including Texas, regarding required SIP revisions for moderate nonattainment areas. Effective Nov. 17, 2023, the action starts sanctions clocks (18 months) and FIP clocks (24 months). On June 12, 2024, EPA finalized reclassification of the DFW, HGB, and Bexar County areas to serious. SIP revisions for all three areas are due to EPA by Jan. 1, 2026.

El Paso Area

In August 2018, the City of Sunland Park, New Mexico, and environmental petitioners challenged EPA's 2015 ozone standard attainment/unclassifiable designation for El Paso County in the D.C. Circuit Court of Appeals. On Nov. 30, 2021, EPA published a final nonattainment designation for El Paso County. EPA expanded the Sunland Park nonattainment area to include all of El Paso County, and the area was renamed the "El Paso-Las Cruces, Texas-New Mexico nonattainment area." On June 30, 2023, the D.C. Circuit Court of Appeals reversed the nonattainment designation for El Paso County, finding that EPA's action was impermissibly retroactive.

Table 4. Ozone-Compliance Status for the 2015 Eight-Hour Standard

Area of Texas	Classification	Attainment Deadline
HGB (six-county area)	Serious Nonattainment	Aug. 3, 2027
DFW (nine-county area)	Serious Nonattainment	Aug. 3, 2027
San Antonio (Bexar County)	Serious Nonattainment	Sept. 24, 2027
All Other Texas Counties	Attainment/ Unclassifiable	Not Applicable

Note: The HGB 2015 ozone nonattainment area comprises the counties of Brazoria, Chambers, Fort Bend, Galveston, Harris, and Montgomery. The DFW 2015 ozone nonattainment area comprises the counties of Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Tarrant, and Wise.

Types of Sources

Emissions that affect air quality can be characterized by their sources.

POINT SOURCES
Examples include industrial facilities such as refineries and cement plants

ON-ROAD MOBILE SOURCES
Examples include cars and trucks

NON-ROAD MOBILE SOURCES
Examples include construction equipment, locomotives, and marine vessels

AREA SOURCES
Examples include dry cleaners, gasoline stations, and residential heating

Transport Rule

In addition to the SIP revisions for areas designated nonattainment for the 2015 ozone standard, TCEQ submitted a transport SIP revision on Aug. 18, 2018, demonstrating that emissions from Texas sources do not contribute significantly to nonattainment or maintenance of the 2015 ozone standard in any other state.

On Feb. 22, 2022, EPA proposed to disapprove Texas' transport SIP based on its own modeling analysis. On April 6, 2022, EPA proposed to replace Texas' transport SIP with a FIP, known as the Transport Rule. On May 1, 2023, the 5th Circuit Court of Appeals stayed EPA's disapproval of the 2015 ozone transport SIP revisions for Texas and Louisiana.

On March 15, 2023, EPA signed a final FIP action to address 23 states' interstate transport obligations for the 2015 ozone standard. Under the FIP requirements, electric generation units (EGUs) in 22 states, including Texas, must participate in a revised and strengthened Cross-State Air Pollution Rule (CSAPR) NOX Ozone Season Group 3 Trading Program beginning in the 2023 ozone season. On July 31, 2023, EPA published an interim final rulemaking to suspend the effectiveness of the FIP for six states including Texas, effective Aug. 4, 2023. The interim final rule also restores the emission budgets, unit-level allowance allocation provisions, and banked allowance holdings that would have been in effect for applicable EGUs prior to the FIP. These provisions will remain in place while the proceedings on which the 5th Circuit's stay was based remain pending.

2010 SO_2 Standard

EPA revised the SO_2 NAAQS in June 2010, adding a one-hour primary standard of 75 parts per billion. In July 2013, EPA designated 29 areas in 16 states, which did not include Texas, as nonattainment for the 2010 standard. On March 2, 2015, a U.S. district court order set a deadline for EPA to complete an additional three rounds of designations for the SO_2 NAAQS.

Effective Jan. 12, 2017, portions of Freestone and Anderson counties (Big Brown), portions of Rusk and Panola counties (Martin Lake), and a portion of Titus County (Monticello) were designated nonattainment. In October 2017, Luminant (Vistra Energy) filed notices with the Electric Reliability Council of Texas stating its plans to retire the Big Brown and Monticello power generation plants. TCEQ voided permits for these two plants on March 30, 2018.

On Aug. 22, 2019, EPA proposed error corrections to revise the designations of portions of Freestone, Anderson, Rusk, Panola, and Titus counties from nonattainment to unclassifiable; however, the error correction was never finalized. On April 27, 2020, Sierra Club filed suit against EPA, because EPA did not issue findings of failure to submit attainment demonstrations for the three nonattainment areas. EPA published its finding of failure to submit for these three nonattainment areas on Aug. 10, 2020, effective Sept. 9, 2020.

On Feb. 9, 2022, the commission adopted the Rusk-Panola 2010 SO_2 NAAQS Attainment Demonstration SIP Revision and associated agreed order to address the finding of failure to submit. TCEQ submitted the SIP revision to EPA on Feb. 28, 2022. On Aug. 2, 2024, EPA proposed to determine that the Rusk-Panola nonattainment area failed to attain the SO_2 NAAQS by the attainment date and proposed a limited approval and disapproval of the SIP revision.

On Feb. 23, 2022, the commission adopted the Redesignation Request and Maintenance Plan SIP Revision for the Freestone-Anderson and Titus SO_2 NAAQS Nonattainment Areas to request redesignation to attainment and address remaining requirements from the finding of failure to submit. TCEQ submitted the SIP revision to EPA on March 3, 2022.

On March 26, 2021, EPA published nonattainment designations for portions of Howard, Hutchinson, and Navarro counties that were effective April 30, 2021. TCEQ submitted SO_2 attainment demonstration SIP revisions for Howard, Hutchinson, and Navarro counties and the associated Title 30, Texas Administrative Code, Chapter 112 rulemaking on Oct. 5, 2022.

Evaluating Air Monitoring from a Health Effects Perspective

In a variety of ways, TCEQ toxicologists meet their goals of identifying chemical hazards, evaluating potential exposures, assessing human health risks, and communicating risk to the general public and stakeholders. Perhaps most notably, TCEQ relies on health- and welfare-protective values developed by its toxicologists to ensure that both permitted and monitored airborne concentrations of pollutants stay below levels of concern. The scientific quality of these values has been recognized by academic institutions and scientific societies, and multiple federal agencies, states, and other countries use TCEQ's values.

The health- and welfare-protective values TCEQ toxicologists use are called air monitoring comparison values (AMCVs). AMCVs are used to evaluate the public health risk of millions of measurements of air pollutant concentrations that are collected from the ambient air monitoring network throughout the year. Recently, TCEQ toxicologists developed different types of screening values that allow TCEQ to analyze the instantaneous chemical concentration data generated by the mobile instruments, both in terms of whether concentrations are higher than usual (compared to baseline air concentrations) and from the perspective of the potential for acute health effects from exposure to staff while in the field. These screening values are called mobile monitoring comparison values (MMCVs).

When necessary, TCEQ also conducts health-effects research on particular chemicals with limited or conflicting information. In fiscal 2022 and 2023, TCEQ and its contractors continued research to understand health risks in communities with neighboring industrial facilities, such as refineries. This work can inform the review and assessment of state and federal air quality regulations, and the health risks to humans from exposure to air, water, or soil samples collected during investigations and remediation. It can also aid in communicating health risks to the public. In addition, TCEQ and its contractors worked on updating systematic review methods and their use for conducting transparent, unbiased reviews of chemical risk.

Finally, TCEQ toxicologists communicate risk and toxicology with state and federal legislators and their committees, EPA, other government agencies, the press, and judges during legal proceedings. This often includes input on EPA rulemaking, including the NAAQS, through written comments, meetings, and scientific publications.

Air Pollutant Watch List

TCEQ toxicologists oversee the Air Pollutant Watch List program to address areas in Texas where monitoring data show persistent, elevated concentrations of air toxics. TCEQ uses the APWL to focus its resources, notify the public, engage stakeholders, and develop strategic actions to reduce emissions. Each year TCEQ collects an extensive amount of ambient air monitoring data and evaluates it to determine the potential for adverse short- and long-term health effects, for vegetative effects, and for odorous levels.

TCEQ routinely reviews and conducts health-effects evaluations of ambient air monitoring data from across the state by comparing air toxic concentrations to their respective AMCVs or state standards. TCEQ evaluates areas for inclusion on APWL where monitored concentrations of air toxics are persistently measured above AMCVs or state standards.

The purpose of the watch list is to reduce air toxic concentrations below levels of concern by focusing TCEQ resources and heightening the awareness of interested parties in areas of concern.

TCEQ also uses the watch list to identify companies with the potential for contributing to elevated ambient air toxic concentrations and then develop strategic actions to reduce emissions. An area's inclusion on the watch list results in more stringent permitting, priority in investigations, and in some cases, increased monitoring.

Four areas of the state are currently on the watch list. TCEQ continues to evaluate the current and historical APWL areas to determine whether improvements in air quality have occurred and are maintained. TCEQ has also identified areas in other parts of the state with monitoring data that are close or slightly above AMCVs and is working proactively with nearby companies to reduce air toxic concentrations, preventing the need for listing these areas on the watch list.

You can find the Air Pollutant Watch List at www.tceq.texas.gov/toxicology/apwl.

Figure 1. Coastal Area Air Monitoring Stations

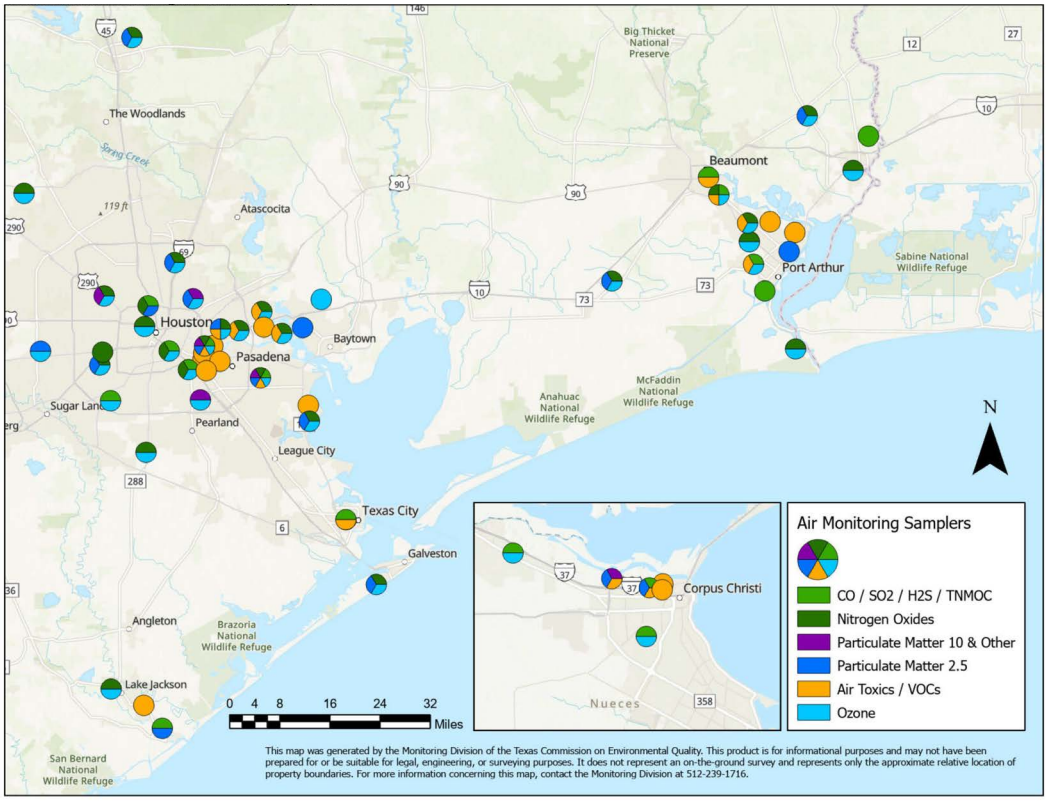
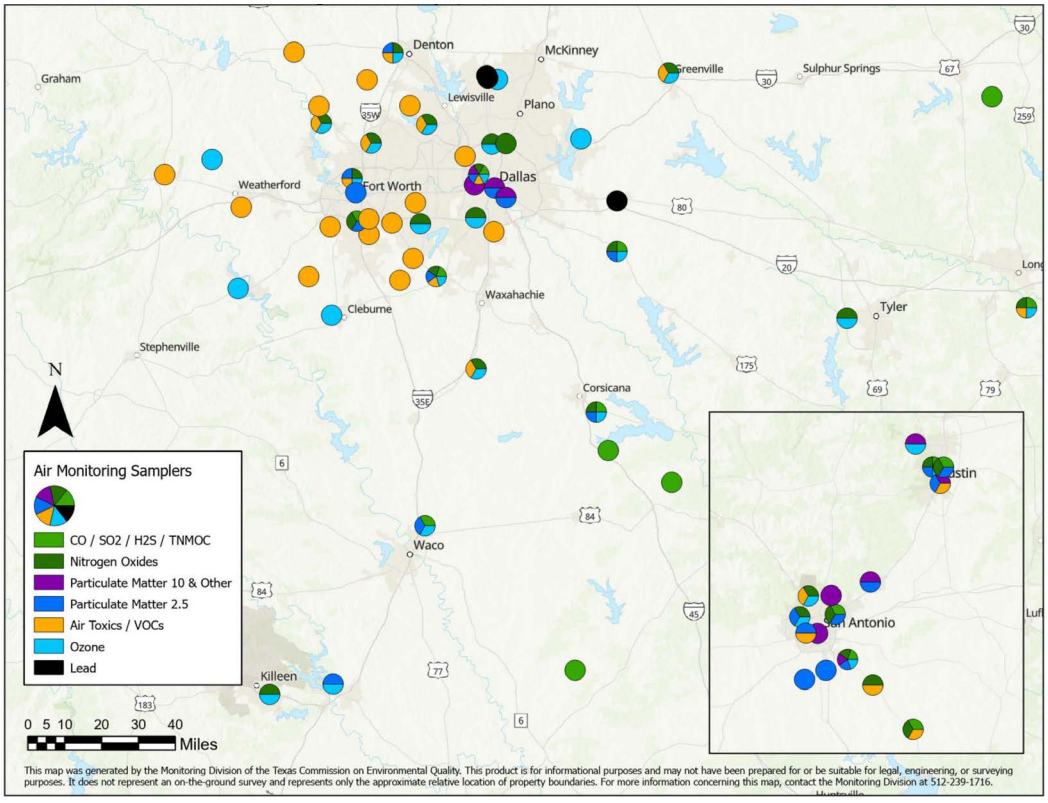


Figure 2. Dallas-Fort Worth and Central Texas Air Monitoring Stations



Air Monitoring

TCEQ monitors air quality across the state using a network of stationary air monitors, mobile monitoring assets, and handheld monitors. Ambient air quality monitoring allows the agency to determine compliance with federal air quality standards, evaluate air pollution trends, study air pollution formation and behavior, assess localized air quality concerns, and provide support during environmental emergencies and natural disaster recovery.

While ambient air monitors can measure the impact on air quality from a variety of sources in an area, they are not intended to measure emissions or determine compliance from individual sources or facilities.

Stationary Monitoring

TCEQ's stationary air monitoring network consists of approximately 150 monitoring stations serving over 26 million Texans. Designed to meet federal air monitoring requirements, the stationary network includes more than double the number of monitors required by federal rule, in addition to numerous state-initiated monitors. As illustrated in Figures 1 and 2, monitors are predominantly located in population centers, with increased coverage in metropolitan areas with greater industrial activity.

Monitoring Vans

Augmenting the stationary network is a fleet of three Strategic Mobile Air Reconnaissance Technology (SMART) vans capable of continuous, real-time measurement of a wide range of target pollutants while in transit. These monitoring vans use on-board instruments and GPS mapping to provide:

- Net upwind and downwind measurements.
- In-transit surveys to identify pollution hot spots.
- Identification of odorous compounds.
- Plume tracing using wind speed, wind direction, and optical gas imaging of potential sources.
- Data for assessing regulatory and health impacts.

Housed in Austin, these three monitoring vans can travel anywhere in Texas to conduct short-term air monitoring assessments in support of regional investigations, special air quality projects, environmental emergencies, and natural disaster recovery.

In addition to the Austin-based SMART vans, TCEQ's Beaumont, Houston, Corpus Christi, Dallas-Fort Worth, and Midland regions each house a rapid assessment survey vehicle capable of continuous, real-time measurement and mapping of target compounds.

Handheld Monitoring

Handheld air monitoring equipment and optical gas imaging cameras allow TCEQ to assess air quality at the source level in response to complaints, environmental emergencies, and natural disasters. Using these tools, investigators routinely conduct air reconnaissance to identify potential sources impacting air quality for further evaluation and potential enforcement. They target areas of concern, such as industrial areas near residential receptors, the Gulf Coast's industrial ports, and oil and gas operations and refineries.

Regional Haze

The Guadalupe Mountains and Big Bend national parks are identified by the federal government for visibility protection, along with 154 other national parks and wilderness areas. Regional Haze is a long-term air quality program requiring states to develop plans to meet a goal of natural visibility conditions by 2064. In Texas, the primary visibility-impairing pollutants are nitrogen oxides (NOX), SO_2, and PM. Requirements for the Regional Haze Program include a Regional Haze SIP revision that is due to EPA every 10 years and a progress report due every five years, to demonstrate progress toward natural conditions.

In 2009, TCEQ submitted Texas' Regional Haze SIP revision for the first planning period, 2009 through 2018. In 2016, EPA finalized a partial disapproval of that plan and proposed a FIP that would have required emissions control upgrades or emissions limits at eight coal-fired power plants in Texas. In July 2016, Texas and other petitioners challenged

the FIP action in the 5th Circuit Court of Appeals, contending that EPA acted outside its statutory authority. In 2017, EPA asked the court to remand the FIP back to EPA and sought a stay of the litigation pending review of the FIP, which was granted by the court.

Due to continuing issues with CSAPR, EPA could not act on best available retrofit technology (BART) requirements for EGUs. On March 20, 2018, the D.C. Circuit Court of Appeals issued a ruling upholding "CSAPR-better-than-BART" for regional haze.

On Oct. 17, 2017, EPA adopted a FIP to address BART for EGUs in Texas, which included an alternative trading program for SO_2. EPA administers the trading program, which includes only specific EGUs in Texas and no out-of-state trading. For NOX, Texas remains in CSAPR. For PM, EPA determined that no further action was required. On June 29, 2020, EPA finalized the amended BART intrastate trading program FIP for Texas, and the trading program was affirmed as an alternative to BART requirements for certain sources in Texas.

In May 2023, EPA proposed to reconsider its BART FIP for SO_2 and PM. If the rule is finalized as proposed, it would withdraw the existing SO_2 trading program administered by EPA and replace it with source-specific emissions limits or operational restrictions. Affected sources would have the flexibility to decide what control technology or operational changes—or both—to implement to meet emissions limits. The rule would also set emissions limits for PM BART, which EPA anticipates the facilities are already meeting.

In July 2023, EPA proposed a new disapproval of Texas' first planning period SIP revision and an associated FIP. The proposed FIP would no longer require additional controls to make reasonable progress due to retirements and other operational factors for some of the affected Texas EGUs as well as requirements in EPA's May 2023 proposed reconsideration BART FIP.

On July 20, 2021, TCEQ submitted Texas' Regional Haze SIP revision for the second planning period, 2019 through 2028. Analyses showed that the estimated annualized costs of implementing additional controls for the second planning period would be approximately $200 million and would achieve visibility benefits imperceptible to the human eye. Therefore, the commission found that additional emissions controls were unreasonable. This SIP revision is under EPA review.

A five-year progress report for the second planning period is due to EPA by Jan. 31, 2025. The commission is scheduled to consider Texas' final progress report on Dec. 18, 2024.

Major Incentive Programs

Texas Emissions Reduction Plan

TCEQ's Texas Emissions Reduction Plan (TERP) provides grants to individuals and entities for projects that will lower NOX emissions from mobile sources.

Because NOX is a leading contributor to the formation of ground-level ozone, reducing these emissions is key to complying with the federal ozone standard. Programs under TERP also:

- Encourage adoption of electric, natural gas, and other alternative fuel vehicles and the infrastructure needed to power them.
- Reduce emissions of diesel exhaust from school buses.
- Advance technologies that reduce emissions from stationary sources and oil and gas activities.
- Fund studies and pilot programs that encourage port authorities to reduce cargo handling emissions.

TERP funding is generated from fees on the sale and use of heavy-duty diesel equipment, vehicle title fees, and commercial registration and inspection fees. TERP program descriptions and accomplishments follow.

Diesel Emissions Reduction Incentive (DERI) Program

- Upgrades or replaces heavy-duty vehicles, locomotives, marine vessels, or other equipment in nonattainment areas and affected counties with newer, cleaner models.
- Over $1.3 billion awarded from 2001 through August 2024 to upgrade or replace 21,680 vehicles, locomotives, marine vessels, and other equipment.
- Projected to reduce 191,066 tons of NOX emissions.

Seaport and Rail Yard Areas Emissions Reduction (SPRY) Program

- Upgrades or replaces older drayage trucks and equipment operating at seaports and rail yards in nonattainment areas with newer, cleaner models.
- Over $36 million awarded from 2015 through August 2024 to replace 462 vehicles and equipment.
- Projected to reduce 1,617 tons of NOX emissions.

Port Authority Studies and Pilot Programs (PASPP)

- Provides grants to port authorities in nonattainment areas or affected counties to conduct studies and implement pilot programs to reduce emissions of NOX and PM caused by moving cargo.
- $3 million awarded from 2018 through August 2024 for studies and pilot programs.

Texas Clean Fleet Program (TCFP)

- Assists large fleets in Texas with replacing diesel-powered vehicles with new alternative fuel, electric, or hybrid vehicles.
- Over $81 million awarded from 2009 through August 2024 to replace 797 vehicles.
- Projected to reduce 750 tons of NOX emissions within the Clean Transportation Zone.

Texas Natural Gas Vehicle Grants Program (TNGVGP)

- Replaces or repowers diesel or gasoline vehicles with new or used natural gas vehicles or new natural gas engines.
- Over $59 million awarded from 2009 through August 2024 to replace or repower 1,189 vehicles.
- Projected to reduce 1,717 tons of NOX emissions within the Clean Transportation Zone.

Alternative Fueling Facilities Program (AFFP)

- Ensures that alternative fuel and electric vehicles have access to fuel and charging infrastructure in Texas.
- Over $39 million awarded from 2012 through August 2024 for constructing or expanding 357 facilities, including 250 electric charging stations, 82 natural gas, 24 biodiesel, and one hydrogen fueling facility.

Texas Clean School Bus (TCSB) Program

- Reduces children's exposure to diesel exhaust statewide by replacing or retrofitting older school buses.
- Over $78 million awarded from 2008 through August 2024 to retrofit or replace 8,228 buses.

New Technology Implementation Grant (NTIG) Program

- Reduces emissions from stationary sources and oil and gas activities statewide.
- Over $25 million awarded from 2010 through August 2024 for 17 projects.

Light-Duty Motor Vehicle Purchase or Lease Incentive Program (LDPLIP)

- Supports purchases of light-duty natural gas, propane, hydrogen fuel cell, or electric vehicles.

- Over $23 million awarded from 2014 through August 2024 for purchasing or leasing 9,394 plug-in electric or hybrid electric vehicles, 292 natural gas or propane vehicles, and four hydrogen fuel cell vehicles.

Governmental Alternative Fuel Fleet (GAFF) Program

- Supports political subdivisions across Texas in upgrading, replacing, or expanding their vehicle fleets to alternative fuel or electric vehicles, including the fueling or electric charging infrastructure needed for those vehicles.
- $9.9 million awarded since 2021 for replacing or purchasing 216 natural gas and electric vehicles and installing fueling and electric charging infrastructure.

Texas Hydrogen Infrastructure, Vehicle, and Equipment Program (THIVE)

Established by the 88th Texas Legislature (2023), THIVE provides grants for hydrogen vehicles, equipment, and fueling infrastructure in nonattainment areas and affected counties. TCEQ will award all $16 million in available THIVE funding for 46 heavy-duty hydrogen vehicles.

As of Aug. 1, 2024, TCEQ has implemented the following fiscal 2024-2025 TERP programs: LDPLIP, AFFP, THIVE, TCSB, DERI-Rebate Grants, and DERI-ERIG. TCEQ will implement the remaining TERP grant programs in fiscal 2025.

The TERP Biennial Report to the Texas Legislature (TCEQ publication SFR-079/20) provides further details on the program's grants and activities.

Texas Volkswagen Environmental Mitigation Program

In 2017, Gov. Greg Abbott selected TCEQ to administer $209 million in Volkswagen State Environmental Mitigation Trust funding for projects to mitigate NOX emissions from vehicles using defective devices to pass emissions tests.

From 2019 through August 2024, TCEQ awarded over $120 million under the Texas Volkswagen Environmental Mitigation Program, replacing 1,238 vehicles including school buses, transit buses, refuse trucks, local delivery vehicles, and port drayage vehicles. These projects will mitigate 1,453 tons of NOX emissions in nonattainment areas and affected counties. TCEQ also awarded over $29 million for 3,619 electric vehicle chargers and will award additional funds under the program in fiscal 2025.

Texas Voluntary Marginal Conventional Well Plugging Program

In May 2024, TCEQ received $134 million in Methane Emissions Reduction Program funds to implement the Texas Voluntary Marginal Conventional Well Plugging Program (TXMCW). TCEQ will implement TXMCW and provide financial incentives to well owner-operators to voluntarily plug wells on nonfederal lands to reduce methane emissions in the state.

Environmental Research and Development

TCEQ supports scientific research to study air quality in Texas. The Air Quality Research Program (AQRP) is administered by The University of Texas at Austin and funded by TCEQ. AQRP funds projects that build on research from the previous biennium.

Recent air quality research carried out through AQRP has included projects that:

- Evaluated the Houston nitrogen oxides emission inventory and developed refined air quality modeling configurations for coastal Texas using the 2021 Tracking Aerosol Convection Experiment – Air Quality (TRACER-AQ) field campaign data.
- Quantified the emissions and spatial distribution of volatile consumer products in the Houston area.
- Evaluated the ability of models to use satellite and surface observations of domestic biomass burning to inform impacts on urban air quality.

- Measured ozone precursors and biomass-burning tracers in the Dallas-Fort Worth area.
- Evaluated satellite data to potentially improve emission inventories.

In addition to research carried out through the AQRP, TCEQ used grants and contracts to support ongoing air quality research. Notable projects that TCEQ directly funded have:

- Organized and managed the 2022 TRACER-AQ 2 and 2023 Mobile and Offshore Air Quality field campaigns in Houston to study ozone formation, evaluate models/satellites, and verify emission inventories.
- Analyzed the TRACER-AQ 1 and 2 field campaign data to improve the understanding of ozone formation, emissions estimates, and air quality model performance.
- Analyzed fire impacts on Texas air quality using different modeling and measurement methods, with an emphasis on identifying exceptional events that may affect air quality.
- Updated inventories for emissions from on-road and non-road vehicles, commercial marine vessels, aircraft, locomotives, rail yards, and compressor engines.
- Improved the chemical and meteorological processes of the ozone and PM modeling system.
- Conducted speciated $PM_{2.5}$ monitoring to help identify constituents and source contributions, including international sources and biomass burning.
- Performed monitoring studies in El Paso to understand contributions to various pollutants from within and outside the U.S.

The latest findings from these research projects help the state understand and appropriately address some of the challenging air quality issues faced by Texans. These challenges are increasing—in part due to changes in air quality standards—and addressing them will require continued research. This knowledge helps ensure that Texas adopts attainment strategies that are achievable, sound, and based on the most current information.

WATER QUALITY

Developing Surface Water Quality Standards

Texas Surface Water Quality Standards

The federal Clean Water Act requires TCEQ to review and, if appropriate, revise the Texas Surface Water Quality Standards every three years. The standards are the basis for establishing discharge limits in wastewater permits, setting instream water quality goals, and establishing criteria to assess instream attainment of water quality.

Water quality standards are set for water bodies based on their specific uses: aquatic life, recreation, drinking water, fish consumption, and general use. The standards establish water quality criteria for physical, chemical, and biological characteristics. The commission adopted revised water quality standards in September 2022, major revisions included:

- Revisions to statewide toxic criteria to incorporate new data on toxicity effects and address revised EPA procedures.
- Revisions and additions to site-specific toxic criteria to incorporate local water quality data into criteria for select water bodies.
- Revisions and additions to the uses, criteria, and descriptions of individual water bodies based on new data and results of recent use-attainability analyses (UAAs).
- Additions of site-specific recreational uses for select water bodies based on the results of recent recreational UAAs.

EPA must approve revised standards before they can be applied to activities related to the federal Clean Water Act. Though federal review of portions of the 2010, 2014, 2018, and 2022 standards has

yet to be completed, TCEQ proceeded with the 2026 triennial standards review. Initial preparations for revisions to the Texas Surface Water Quality Standards began in May 2024, and proposal to the commission is anticipated in 2026.

Use-Attainability Analyses

The Surface Water Quality Standards Program coordinates and conducts use-attainability analyses to develop site-specific uses for aquatic life and recreation. The UAA assessment is used to reevaluate designated or presumed uses when the existing standards may need to be revised. Based on data from aquatic-life UAAs, site-specific aquatic-life uses and dissolved-oxygen criteria may be proposed for individual water bodies in the 2026 revision to the Texas Surface Water Quality Standards.

In 2009, TCEQ developed recreational UAA procedures to evaluate and more accurately assign levels of protection for water recreational activities. Since then, TCEQ initiated more than 162 UAAs to evaluate recreational uses of water bodies not attaining their existing criteria. Using results from recreational UAAs, TCEQ will include site-specific contact recreation criteria for select individual water bodies in the 2026 Texas Surface Water Quality Standards revision.

A use-attainability analysis is a scientific assessment of the physical, chemical, biological, or recreational characteristics of a water body.

Monitoring Water Quality

Surface water quality is monitored across the state in relation to human health concerns, ecological conditions, and designated uses. Collected data form a basis for policies that promote the protection and restoration of surface water in Texas. Special projects contribute water quality information on the condition of biological communities. This provides a basis for developing and refining criteria and metrics used to assess the condition of aquatic resources.

Clean Rivers Program

The Clean Rivers Program administers and implements a statewide framework set out in Texas Water Code, Section 26.0135. This state program works with 15 regional partners (river authorities and others) to collect water quality samples, derive quality-assured data, evaluate water quality issues, and provide a public forum for prioritizing water quality issues in each Texas river basin. The program provides 65% to 75% of the data available in the state's surface water quality database used for water-resource decisions, including revising water quality criteria, identifying the status of water quality, and supporting the development of projects to improve water quality.

Coordinated Routine Monitoring

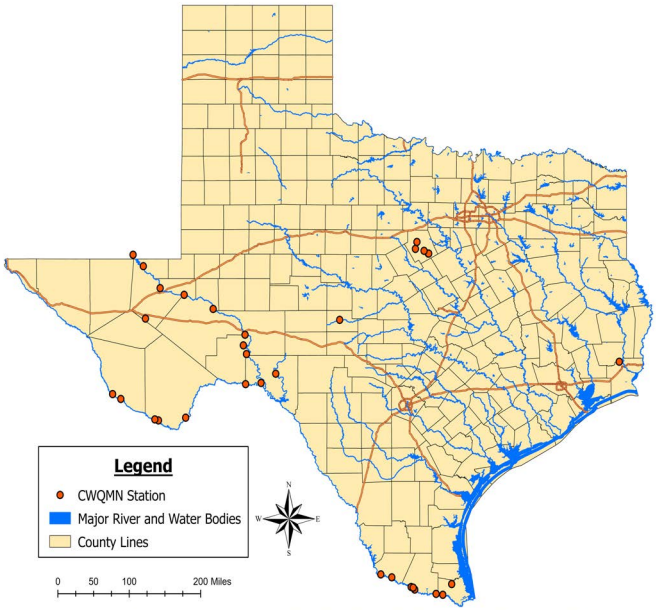
Each spring TCEQ staff meets with water quality organizations to coordinate monitoring efforts for the upcoming fiscal year. Meeting participants use information from approximately 2,000 active stations and parameters to efficiently utilize resources to maximize water quality sample collection and address monitoring priorities.

Continuous Water Quality Monitoring

TCEQ developed and maintains a network of continuous water quality monitoring sites on priority water bodies. The Continuous Water Quality Monitoring Network (CWQMN) has 32 sites where basic water quality measurements are collected every 15 minutes. The data are posted on TCEQ's website.

CWQMN monitoring data may be used to make decisions about water-resource management to target field investigations, evaluate the effectiveness of water quality management programs such as total maximum daily load (TMDL) implementation plans and watershed protection plans, characterize existing conditions, develop and calibrate water quality models, define stream segment boundaries, and evaluate spatial and temporal trends.

Figure 3. TCEQ Continuous Water Quality Monitoring Stations – July 2024



This map was generated by the Texas Commission on Environmental Quality, Water Quality Planning Division. This product is for informational purposes and does not represent property boundaries. If you have questions concerning this map, contact the Water Quality Planning Division at 512-239-6682.

Assessing Water Quality

Each even-numbered year, TCEQ assesses data from over 200 different water quality parameters to determine which water bodies meet surface water quality standards for their designated uses, such as contact recreation, support of aquatic life, or drinking-water supply. Data include physical and chemical constituents, as well as measures of biological integrity. The assessment is published on TCEQ's website and submitted as a draft to EPA as the Texas Integrated Report for Clean Water Act, Sections 305(b) and 303(d) found at www.tceq.texas.gov/waterquality/assessment.

Waters that do not attain one or more of the standards may require action by TCEQ and are placed on the 303(d) List of Impaired Water Bodies for Texas. EPA must approve this list before implementation by TCEQ's water quality management programs.

Texas has many miles of streams, and as a result, TCEQ can facilitate monitoring in only a portion of its surface water bodies. Major river segments and those considered at highest risk for pollution are monitored and assessed regularly. In the 2022 Integrated Report, approved by EPA in July 2022, water quality data was evaluated from 2,409 sites on 1,601 water bodies. The draft 2024 Integrated Report has been adopted by TCEQ and submitted to EPA.

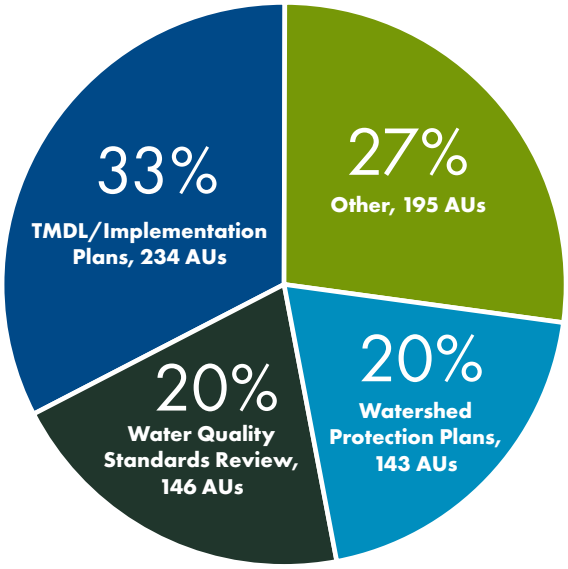
Restoring Water Quality

Watershed Action Planning

Watershed Action Planning (WAP) is a process for coordinating, documenting, and tracking the actions necessary to protect and improve the quality of the state's streams, lakes, and estuaries. The WAP process, led by TCEQ and the Texas State Soil and Water Conservation Board (TSSWCB), engages stakeholders in the selection of an appropriate restoration strategy to restore water quality. Figure 4 reflects the strategies assigned for water bodies in the 2022 Texas Integrated Report.

Figure 4. Management Strategies for Restoring Water Quality

An assessment unit (AU) is the smallest geographic area used when evaluating surface water quality.



Total AUs with an assigned restoration strategy: 718
- Watershed Protection Plans, 143 AUs, 20%
- Water Quality Standards Review/UAAs, 146 AUs, 20%
- TMDLs/Implementation Plans, 234 AUs, 33%
- Other, 195 AUs, 27%

Source: WAP database and the 2022 Texas Integrated Report.

Total Maximum Daily Load Program

The TMDL Program is one of TCEQ's mechanisms for improving water quality through developing practicable targets for pollutant reductions. A TMDL is the total amount (or load) of a single pollutant a receiving water body can assimilate within a 24-hour period and maintain water quality standards for a particular use. This program works with the agency's water quality programs, other governmental agencies, and watershed stakeholders to develop TMDLs and related Implementation Plans (I-Plans).

Of the 1,051 assessment units listed in the 2022 Texas Integrated Report of Surface Water Quality, about one-third were bacterial impairments to recreational water uses. Bacteria from human and animal wastes can indicate the presence of disease-causing microorganisms that may pose a threat to public health.

The TMDL Program has an effective strategy for developing TMDLs to protect recreational safety that relies on engagement of communities in affected watersheds. Other actions are taken to address bacteria impairments, such as recreational use-attainability analyses that ensure the appropriate contact recreation use is in place, and watershed protection plans developed by stakeholders to reduce nonpoint sources.

While a TMDL analysis is being completed, stakeholders are engaged in the development of an I-Plan. An I-Plan outlines the necessary steps to improve water quality, who will carry them out, when they will be done, and how improvement will be gauged. The stakeholders commit to meet periodically with the time frames for completing I-Plans driven by stakeholder resources and when stakeholders reach consensus. The plan may also be revised to maintain sustainability and adjusted to changing conditions.

Since 1998, TCEQ has developed TMDLs to improve the quality of impaired water bodies on the federal 303(d) List, which identifies surface waters that do not meet one or more water quality standards. The agency has adopted 452 TMDLs in the state. From July 2022 to July 2024, the commission adopted 12 TMDLs to address bacteria impairments and approved I-Plans for four water bodies.

Nonpoint Source Program

The Nonpoint Source (NPS) Program administers the provisions of Section 319 of the federal Clean Water Act which authorizes grant funding for states to develop projects and implement NPS pollution management strategies to maintain and improve water quality conditions. TCEQ, in coordination with TSSWCB, manages NPS grants to carry out the long- and short-term goals identified in the Texas NPS Program. The NPS grant from EPA is split between TCEQ (to address urban and nonagricultural NPS pollution) and TSSWCB (to address agricultural and silvicultural NPS pollution). TCEQ receives $3-$4 million annually. About 60% of overall project costs are federally reimbursable; the remaining 40% comes from local matching. In fiscal 2023 and 2024, TCEQ received $5.8 million, which was matched with $3.9 million local dollars, for a total of $9.6 million.

TCEQ annually solicits applications through a competitive process to develop projects that contribute to the goals of the Texas NPS Program. Typically, the program receives 10 to 20 applications each year. The number of projects funded depends on the amount of each project and available funding. Ten projects were funded in fiscal 2023, and 10 in fiscal 2024. Half of the federal funds awarded must be used to implement EPA-accepted watershed-based plans, activities that include public outreach, education, and best management practices to reduce nonpoint sources of pollution.

The NPS Program also administers provisions of Section 604(b) of the federal Clean Water Act. These funds are derived from State Revolving Fund appropriations under Title VI of the act. Using a legislatively mandated formula, money is passed through from TCEQ to councils of governments for water quality planning. The program received a total of $1.2 million in EPA federal funding over fiscal 2023 and 2024.

Bay and Estuary Programs

The estuary programs are nonregulatory, community-based programs focused on conserving the sustainable use of bays and estuaries in the Houston-Galveston and Coastal Bend regions' bays through implementation of locally developed comprehensive conservation management plans. Two different organizations execute the plans: the Galveston Bay Estuary Program (GBEP), a program of TCEQ, and the Coastal Bend Bays and Estuaries Program (CBBEP), which is a nonprofit authority established for that purpose.

In addition to the estuary programs, TCEQ participates in coastal partnerships with other Texas agencies and states. TCEQ participates in the Gulf of Mexico Alliance, a partnership linking Texas, Alabama, Florida, Louisiana, and Mississippi. Staff contribute to implementing the Alliance's Governors' Action Plan, participating in water resource and data and monitoring teams. TCEQ serves on the Coastal Coordination Advisory Committee and participates in the state's Coastal Management Program to ensure long-term ecological and economic productivity of coastal natural resources. TCEQ works with the General Land Office to carry out the federally approved Coastal Nonpoint Source Program, required under the Coastal Zone Act Reauthorization Amendments.

Galveston Bay Estuary Program

GBEP provides ecosystem-based management that strives to balance economic and human needs with available natural resources in Galveston Bay and its watershed. The program fosters cross-jurisdictional coordination among federal, state, and local agencies and groups, and cultivates diverse public-private partnerships to implement projects and build public stewardship.

During fiscal 2023 and 2024, GBEP worked with partners to conduct ecosystem-based monitoring and research to inform resource managers and fill data gaps. The program collaborated with local stakeholders to create watershed-protection plans and carry out water quality projects. GBEP continued implementation of an interactive Regional Monitoring Database where users view, explore, and download management and research data on Galveston Bay. GBEP completed the Galveston Bay Estuary Resilience Action Plan, a stakeholder-driven project that assesses a series of coastal resilience criteria against the goals, objectives, and actions in the Galveston Bay Plan, 2nd Edition. GBEP also continued implementation of the Conservation Assistance Program, which provides regional support for land conservation efforts within the Galveston Bay watershed.

GBEP, in coordination with local partners, protected, restored, or enhanced 1,149 acres of coastal wetlands and other habitats in fiscal 2023 and 2024. Three projects will place an additional 2,891 acres under conservation by the end of calendar 2024. Since 2000, GBEP and its partners have protected, restored, and enhanced a total of 41,760.69 acres of important coastal habitats.

Through collaborative partnerships established by the program, approximately $7.10 in private, local, and federal contributions was leveraged for every $1 the state dedicated to the program.

Coastal Bend Bays and Estuaries Program

CBBEP is a voluntary partnership that works with industry, environmental groups, bay users, local governments, and resource managers to improve the health of the Coastal Bend bay system. CBBEP receives program funds from TCEQ, EPA, local governments, private industry, private grants, and other governmental agencies. In fiscal 2023 and 2024, CBBEP secured $18,600,729 in additional funds to leverage TCEQ funding.

CBBEP priority issues focus on human uses of natural resources, freshwater inflows, maritime commerce, habitat loss, water and sediment quality, and education and outreach. One CBBEP goal under their comprehensive conservation and management plan is to address 303(d)-listed segments to meet state water quality standards. During fiscal 2023 and 2024, CBBEP implemented 87 projects, including habitat restoration and protection, outreach and educational programs, and studies that promote bay and estuary watershed planning.

Wastewater Permitting

TCEQ issues authorizations and registrations for the safe disposal of wastewaters into or adjacent to water in the state. These wastewater, stormwater, agriculture, and sludge permits include requirements that ensure the disposal does not degrade water or land resources. The Texas Pollutant Discharge Elimination System (TPDES) Program issues site-specific permits to discharge wastewater or stormwater into water in the state. Texas Land Application Permits (TLAPs) are issued for land application by irrigation including surface irrigation, evaporation, drainfields, or subsurface land application.

These permits include effluent limitations that ensure the discharge does not degrade water quality in the receiving stream. There are two types of permits: an individual permit is tailored to an individual facility, whereas a general permit covers a group of dischargers with similar qualities within a given geographic location.

Developing Protective Permits

The Procedures to Implement the Texas Surface Water Quality Standards (RG-194, June 2010) outline how numeric and narrative water quality standards are applied to wastewater discharge permits. This guidance is updated as needed to reflect changes in water quality standards and TCEQ procedures.

The purpose of the implementation procedures is to determine effluent limitation and monitoring requirements for the draft permit to ensure receiving water uses and water quality are maintained and protected. During the application process the implementation procedures and water quality standards are used for determining uses and water quality criteria of receiving waters, evaluating impacts on endangered species, antidegradation reviews, modeling dissolved oxygen, whole effluent toxicity testing (biomonitoring) requirements, and screening for toxic pollutants and conventional pollutants and parameters. The procedures are applied to both industrial and domestic wastewater permits.

Industrial and Domestic Individual Permits

Individual applications for new, renewal, or amendment permit actions include a technical review, two public notices, and public review period. Uncontested applications take about one year to process. Existing authorizations are reviewed every five years, at minimum. Individual permits are issued for wastewater, industrial process wastewater, sludge, concentrated animal feeding operations, stormwater, and water treatment plant residuals. TCEQ has 3,800 active individual permits.

Industrial wastewater permits are issued for the discharge of wastewater generated from industrial activities. TCEQ issues about 110 industrial wastewater permits each fiscal year. There are currently about 600 industrial authorizations.

Domestic wastewater permits are issued for the discharge of wastewater generated from domestic activities. TCEQ issues TPDES permits for domestic wastewater activities discharging to waters in the state and TLAPs for disposal of domestic wastewater adjacent to water in the state, such as land application.

TCEQ issues about 475 domestic wastewater permits each fiscal year. These permits are increasing as 516 were issued in fiscal 2023 and 500 in fiscal 2024. There are currently about 2,700 domestic authorizations. Applications for domestic wastewater permits are also increasing as 665 were received in fiscal 2023 and 707 in fiscal 2024. Over 300 of these applications are for new facilities.

General Permits

General permits provide a streamlined authorization process for certain discharges of wastewater or stormwater. TCEQ has developed 16 general permits. Applications for stormwater general permits make up most of the general permit workload. The agency has developed an online application for all stormwater general permits and some wastewater general permits to accommodate the growing workload.

Stormwater Permits

TCEQ has three general permits for stormwater based on the source of the stormwater: industrial facilities, construction activities, and municipal entities. The multi-sector general permit (MSGP) regulates stormwater discharges from industrial facilities. The construction general permit (CGP) regulates stormwater runoff associated with construction activities. The municipal separate storm sewer system (MS4) regulates stormwater runoff from large urban areas. There are currently over 8,000 MSGP, over 18,000 CGP, and 521 MS4 authorizations.

Sewage Sludge and Biosolids

Activities involved in the disposal, processing, or land application of domestic sewage sludge, biosolids, and septage may require a permit, registration, or notification. There are currently about 120 authorizations and registrations. Rules related to domestic sewage sludge or biosolids, water treatment plant residuals and domestic septage processing, land application, transportation, and storage, along with applicable limits, are at Title 30 Texas Administrative Code, Chapter 312.

Concentrated Animal Feeding Operations

Animal feeding operations that are designated as a concentrated animal feeding operation (CAFO) based on head count and animal type or other relevant factors must obtain an individual or general permit from TCEQ that authorizes manure and wastewater management activities. The rules governing CAFO permitting are contained in 30 TAC Chapter 321 Subchapter B. There are over 500 CAFO permits.

Water Treatment Plant Residuals and Sludge

The discharge of wastes into or adjacent to water in the state may include wastes associated with water treatment for public drinking water activities. These residuals are material generated during the treatment of either surface water or groundwater for potable use (30 TAC Chapter 335). Both an individual and general permit for the disposal of conventional water treatment plant (WTP) residuals are available. The reverse osmosis water treatment permit, a type of individual industrial permit for WTPs, is often used in areas with brackish source waters. There is also a WTP sludge permit. There are 300 individual and general authorizations for WTPs.

Reuse of Reclaimed Water

Reclaimed water is treated wastewater that is safe and suitable for a purpose that would use other water resources. It is classified according to the source from which the wastewater originated. It may come from either domestic or industrial activities. Rules for use of reclaimed water, usually referred to as “reuse” are provided in 30 TAC Chapter 210.

Pretreatment and Reclaimed Water Programs

TCEQ implements the TPDES Pretreatment Program to protect publicly owned treatment works infrastructure by reducing the conventional and toxic pollutant levels discharged by industries and other nondomestic wastewater sources into municipal sewer systems. Pretreatment programs can also be used to improve local opportunities to recycle municipal and industrial wastewater and sludge. There are 74 approved programs with 140 associated wastewater treatment facilities in Texas.

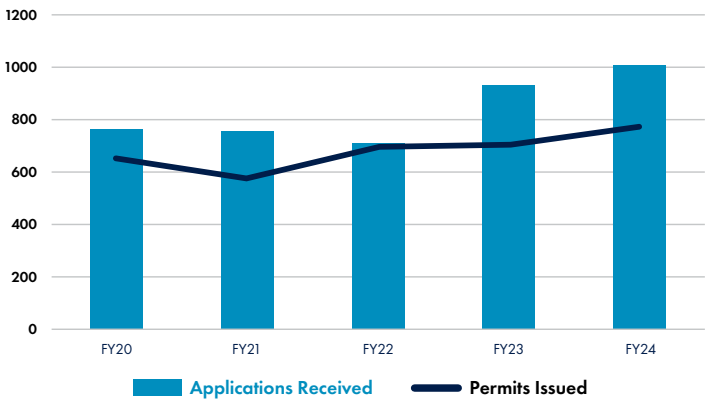
Reviewing Engineering Plans and Specifications

Wastewater treatment plants are required to submit engineering plans and specifications for new wastewater treatments systems or for improvements to existing systems to ensure each system is capable of meeting water quality standards. The plans must be reviewed before construction can begin. TCEQ completed compliance reviews of 1,100 engineering plans in fiscal 2023 and 1,300 in fiscal 2024. Many of these reviews include design changes related to emergency preparedness in 30 TAC Chapter 217.

Public Engagement and Permitting Workloads

Permit application processing has increased because of economic growth and development across the state. Applicants are applying for amendments and expansions of existing facilities and seeking to authorize new activities through the individual permitting process. The complexity of these individual applications has also increased as water quality standards and effluent limitations have been developed or updated. The need for water quality modeling has also increased. The public is also more engaged in the permitting process, resulting in an increase in public comments and public meetings. Figure 5 shows the number of applications received and permit processing efficiency over the last five years. An average of 835 applications are received per fiscal year with only 680 permits issued per fiscal year, resulting in a backlog of applications.

Figure 5. Water Quality Applications Received and Processed, Fiscal 2020-2024



Starting in summer 2024, applications for individual permits are available for public review on the TCEQ website in addition to the public viewing location in the county (30 TAC Chapter 39). As draft permits are prepared, they will also be available online.

DRINKING WATER SYSTEMS

The TCEQ Public Drinking Water Program is responsible for ensuring that Texas citizens receive a safe and adequate supply of drinking water, and carries out this responsibility by implementing the Safe Drinking Water Act. All public water systems (PWSs) must be approved by TCEQ before they begin operating, provide documentation to show that they meet state and federal requirements, and evaluate the quality of the drinking water they distribute.

Ensuring Safe Drinking Water

Of the approximate 7,200 PWSs in Texas, about 4,690 are community systems, mostly operated by cities. These systems serve about 97% of Texans. The rest are non-community systems—such as those at schools, churches, factories, businesses, and state parks. TCEQ offers online data tools so that the public can find information on the quality of locally produced drinking water. Texas Drinking Water Watch (www.tceq.texas.gov/goto/dww) houses analytical results from PWS compliance sampling. The Source Water Assessment Viewer (www.tceq.texas.gov/gis/swaview) shows the location of drinking water sources and any potential sources of contamination, such as an underground storage tank.

All PWSs must monitor the levels of contaminants present in the water they treat and verify that these contaminants do not exceed their maximum contaminant level, action level, or maximum residual disinfection level—the highest level at which a contaminant is considered acceptable in drinking water for the protection of public health.

State and federal regulations have set standards for 102 contaminants in the major categories of microorganisms, disinfection by-products, disinfectants, organic and inorganic chemicals, and radionuclides.

TCEQ evaluates approximately 172,000 analytical results each month to determine compliance with these standards. The most significant microorganism

is coliform bacteria, particularly E. Coli. The most common chemicals of concern in Texas are disinfection by-products, arsenic, fluoride, and nitrate.

TCEQ collects more than 60,000 water samples each year for chemical compliance, which are submitted to an accredited laboratory for analysis. The analytical results are sent to TCEQ and the PWSs.

Each year, TCEQ holds a free symposium on public drinking water, which typically draws more than 1,000 participants. The agency also provides technical assistance to PWSs to ensure that consumer confidence reports are developed correctly and include all required information.

Assisting PWSs

TCEQ strives to ensure that all water and wastewater systems have the capability to operate successfully. TCEQ contracts with the Texas Rural Water Association to assist utilities with financial, managerial, and technical expertise. About 1,089 assignments were made through this contract in fiscal 2023, and 1,090 assignments in fiscal 2024.

Reviewing Engineering Plans and Specifications

To ensure that water systems are capable of meeting safe drinking water standards, PWSs are required to submit engineering plans and specifications for new water systems and for improvements to existing systems. These plans must be reviewed before construction can begin. TCEQ completed compliance reviews of 2,366 engineering plans for PWSs in fiscal 2023 and 2,578 in fiscal 2024.

Table 5. Violations of Drinking-Water Regulations

	Fiscal 2023	Fiscal 2024
Enforcement Orders	334	256
Assessed Penalties	$1,058,553	$1,244,916
Offsets by SEPs	$92,124	96,576

Note: The numbers of PWS orders reflect enforcement actions from all sources in the agency.

Enforcing Compliance

EPA developed the Enforcement Response Policy and the Enforcement Targeting Tool for violations under the Safe Drinking Water Act. TCEQ uses this tool to identify PWSs with either health-based or repeated violations that show a history of violations under multiple rules. Using this tool prioritizes systems with the most significant violations for enforcement action, with the goal of returning those systems to compliance as quickly as possible.

Additionally, any PWS that fails to have its water tested or that reports test results incorrectly faces monitoring and reporting violations. When a PWS has significant or repeated violations of state regulations, a record review investigation is performed and the case is referred to TCEQ's enforcement program. Table 5 lists enforcement orders, assessed penalties, and supplemental environmental projects (SEPs) for violations of drinking water standards.

More than 98% of the state's population is served by a PWS producing water that is in compliance with the National Primary Drinking Water Standards.

Reviewing Water District Applications

The agency reviews applications to create general-law water districts and reviews bond applications for water districts to fund water, sewer, and drainage projects. The agency reviewed 634 water district applications in fiscal 2023 and 628 in fiscal 2024.

Ensuring Adequate Drinking Water Supply

Exploring New Supplies Through Alternative Treatment

The population of Texas is expected to reach almost 46 million by the year 2060. Planning well in advance is critical to meet increasing water needs in a state that experiences prolonged droughts, floods, and other challenges. Recognizing this, more and more PWSs are beginning to propose the use of less-conventional sources of water that often require complex innovative treatment.

TCEQ's engineers and scientists use their expertise to help guide PWSs in selecting effective innovative treatment technologies, and to ultimately grant approvals for those technologies while ensuring that the treated water is safe for human consumption. Some examples of challenging water sources that require such technologies are groundwater with elevated levels of nitrates, radionuclides, or other contaminants; saline or brackish groundwater; seawater; and effluent from municipal wastewater treatment plants reclaimed for direct potable reuse.

Disaster Preparedness

TCEQ's Emergency Preparedness Plan Program assists PWSs and affected utilities in providing a safe, adequate, and continuous supply of drinking water to their customers before, during, and after disasters by using an all-hazards approach. Affected utilities across the state are required to adopt an emergency preparedness plan that lays out how they will provide drinking water to customers during an extended power outage. Additionally, this plan must be submitted to TCEQ for approval.

TCEQ's website provides information on natural disaster preparedness, drinking water and floods, homeland security for PWSs, regulatory guidance, and mutual-aid assistance through the Texas Water/Wastewater Agency Response Network (TXWARN). TCEQ's Water Security Contract provides educational workshops and seminars to PWSs across the state on topics such as risk assessments, emergency response planning, hazard mitigation funding, disaster relief funding, emergency management resources, and drought.

TCEQ's drought program coordinates public drinking water drought-response activities. The program issues updates on the status of drought conditions and continues to monitor a targeted list of PWSs that have limited supplies of water. In addition, the multiagency Emergency Drinking Water Task Force, which was formed to respond to drought emergencies at PWSs, meets regularly to discuss the systems being tracked and opportunities for outreach, funding, and assistance.

WATER AVAILABILITY

Managing Surface Water Rights

TCEQ is charged with managing surface water in Texas and implements that authority through the permitting and enforcement of surface water rights. The use of water for domestic or livestock purposes is considered a superior water right that does not require a permit. TCEQ is responsible for protecting senior and superior water rights, and for ensuring that water right holders only divert state water according to their permits.

Texas water law specifies that in times of shortage, permitted water rights will be administered based on the priority date of each water right, also known as the prior appropriation doctrine—that is, the earliest in time is senior. Also, exempt domestic and livestock uses are superior to permitted rights.

Among permitted water right holders, those that received their authorization first (senior water rights) are entitled to take their water before water right holders that received their authorization on a later date (junior water rights). If senior and superior water right holders are not able to take their authorized water, they can call on TCEQ to enforce the priority doctrine (known as a priority call).

Under the TCEQ v. Texas Farm Bureau decision, if suspension of a water right is necessary to satisfy a priority call by a senior or superior water right, TCEQ will not be able to exempt any junior water rights. This includes exemptions based on public health, safety, or welfare concerns for junior water rights used for municipal purposes or power generation.

Managing Water Availability During Drought

TCEQ responds to severe drought through the following activities:

- Monitoring conditions across the state.
- Expediting the processing of drought-related water rights applications.
- Responding to priority calls.
- Participating in multidisciplinary task force meetings.

TCEQ also provides information about drought to state leaders, legislative officials, county judges, county extension agents, water right holders, and the media.

Water Rights Permitting

Water flowing in Texas creeks, rivers, lakes, and bays is state water. The right to use this water may be acquired through appropriation via permitting as established in state law. An authorization (a permit or certificate of adjudication) is required to divert, use, or store state water; or to use the bed and banks of a watercourse to convey water. However, there are several specific uses that are exempt from the requirement to obtain a water right permit, such as domestic and livestock use. For any new appropriation of state surface water, the Texas Water Code (TWC) requires that TCEQ determine whether water is available in the source. Once obtained, a surface water authorization is perpetual, except for some temporary and term authorizations.

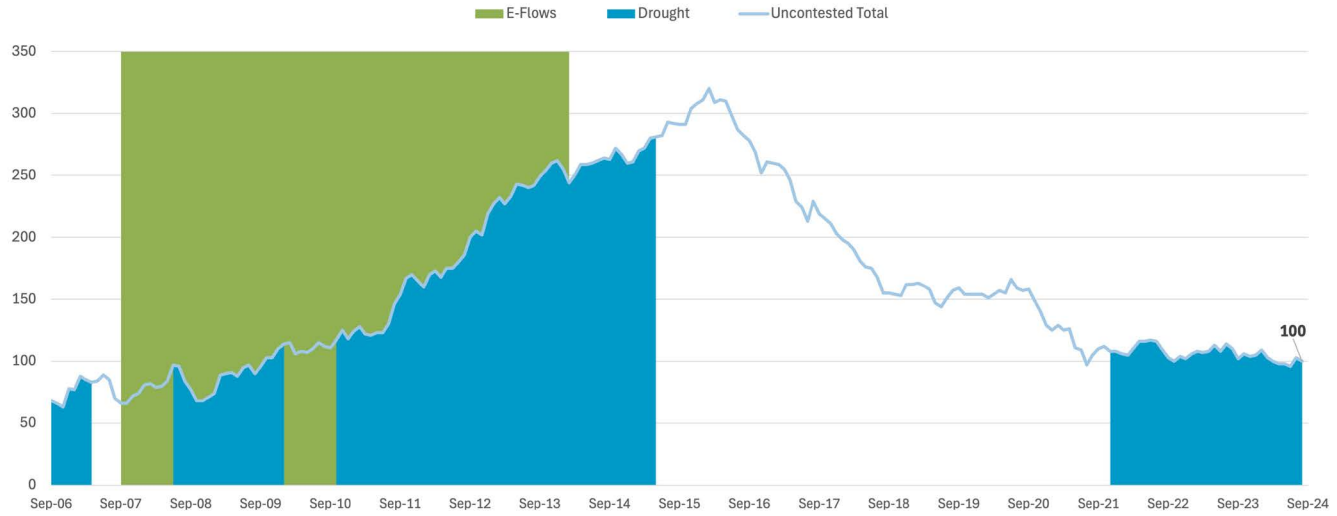
TCEQ reviews permit applications for new appropriations of state water for administrative and technical requirements related to conservation, water availability, and the environment. In addition to new appropriation requests, TCEQ also reviews amendment applications and other applications including bed-and-bank authorization applications, reuse applications, and temporary water rights applications. In fiscal 2023 and 2024, TCEQ processed 866 water rights actions, including new permits, amendments, water-supply contracts, and transfers of ownership.

Major changes to state water policy such as the development of environmental flow standards, drought, complex applications, and other projects, can shift water rights permitting staff from permitting activities. Beginning in 2007, several of these factors affected water rights processing. The result was an increase in uncontested pending permit applications, totaling 320 in 2016. That number has since been reduced to 100 as of September 2024, due to efforts to increase permit processing efficiency. Figure 6 shows the number of pending uncontested applications for water right permits from September 2006 to September 2024.

Applying continuous improvement practices and tools to water rights permitting helped streamline the application process, identify problems with it, and solve them. In 2022, TCEQ began requiring pre-application meetings after finding that this practice resulted in the submittal of more complete applications. Time extensions granted to applicants to respond to requests for information are limited and there are return policies to address unresponsive applicants. In addition, TCEQ has conducted outreach to help water right holders remain in compliance with statutory requirements for reporting water use.

Whenever possible, TCEQ has reached out to water rights stakeholders and increased its presence and availability at water conferences and other events.

Figure 6. Pending Uncontested Water Rights Applications, September 2006–September 2024



Fast Track Permitting

Not all water right applications require the same level of technical review. The Fast Track Program streamlines less complex water right applications through a continuous improvement process. This program has been successful and, as of September 2024, the average processing time for Fast Track applications was 196 days.

Applications for Certain Amendments (House Bill 1964)

In 2019, the 86th Texas Legislature passed House Bill 1964, streamlining the water rights permitting process for simple amendments to a water right that do not affect other water rights or the environment [TWC Subsection 11.122(b-3)]. As of September 2024, the average processing time for these applications was 64 days.

Texas Water Rights Viewer

In September 2019, TCEQ launched the Texas Water Rights Viewer. This GIS-based tool houses water rights information making it easily available to the public in a spatial format. It includes copies of water right permits, water right ownership data, and water-use data. Prior to the viewer, obtaining much of this data required an in-person search of TCEQ records or a Public Information Request.

Since 2019, TCEQ has continued to improve the functionality of the viewer and add additional features and data.

Changes of Ownership and Water Use Reports

TCEQ processes ownership changes in support of water rights permitting statewide. Current ownership information ensures that TCEQ can issue required notices to water right permit holders when a priority call is made and TCEQ suspends or curtails water rights in response.

TCEQ also requires updated water use reports to support modeling efforts and enforcement of water rights. On Jan. 1 of each year, TCEQ sends reports to water right permit holders outside of watermaster areas, and the updated reports are due back to TCEQ on the following March 1. The return rate for these reports was approximately 65% for fiscal 2023, but this represents over 96% of the permitted water.

Water Conservation and Drought Contingency Plans

Under TWC, Chapter 11, and 30 TAC Chapter 288, every five years, required water right holders and entities must develop, implement, and submit updated Water Conservation Plans (including Water Conservation Implementation Reports) and Drought Contingency Plans to TCEQ. The most recent deadline to submit these plans to TCEQ was May 1, 2024.

Environmental Flows

In 2007, the Texas Legislature passed two landmark measures relating to the protection of instream flows and freshwater inflows in the water rights permitting process. The measures changed how the state determines environmental permit conditions for water rights applications.

TCEQ adopted rules for environmental flow standards for Texas rivers and bays that drain to the Gulf of Mexico. TCEQ's ongoing goal is to protect the adopted standards—along with the interests of senior water rights holders—in the water rights permitting process for new appropriations and amendments that increase the amount of water to be taken, stored, or diverted. In 2023, the 88th Texas Legislature passed Senate Bill 1397, requiring TCEQ to submit biennial reports on environmental flow standards beginning in January of 2024.

Evaluations of Water Basins without Watermasters

Under TWC, Section 11.326, TCEQ is required every five years to evaluate water basins without a watermaster program to determine whether

a watermaster should be appointed. Agency personnel are directed to report their findings and make recommendations to the commission.

In 2011, TCEQ developed a schedule for these evaluations and criteria for developing recommendations. TCEQ has completed two five-year cycles of evaluations. In September 2024, the agency completed the third year of the third five-year cycle. In 2023, TCEQ evaluated the Trinity and San Jacinto River Basins and the Trinity–San Jacinto and Neches-Trinity Coastal Basins; and in 2024, the Neches and Sabine River Basins.

The commission did not create a watermaster program on its own motion at the conclusion of any evaluation year. To date, TCEQ has expended approximately $1,258,409 on these evaluations.

For more information, see Appendix D, "Evaluation of Water Basins in Texas without a Watermaster."

Texas Interstate River Compacts

Texas is a party to five interstate river compacts that apportion the waters of the Canadian, Pecos, Red, Rio Grande, and Sabine rivers between the appropriate states. Interstate compacts form a legal foundation for the equitable division of the water of an interstate stream with the intent of settling each state's claim to the water.

Rio Grande Compact

The Rio Grande Compact, ratified in 1939, divided the waters of the Rio Grande among the signatory states of Colorado, New Mexico, and Texas from its source in Colorado to Fort Quitman, Texas. The Compact did not contain specific wording about the apportionment of water in and below the Elephant Butte Reservoir.

However, the Compact was drafted and signed against the backdrop of the 1915 Rio Grande Project and a 1938 U.S. Bureau of Reclamation contract that referred to a division of 57% to New Mexico and 43% to Texas, based on the relative amounts of project acreage originally identified in each state.

The Project provides the means for delivering apportioned water and serves the reach of the Rio Grande below Elephant Butte Reservoir to El Paso, Texas, along with canals and diversion works in both New Mexico and Texas. Two districts receive project water: Elephant Butte Irrigation District, in New Mexico, and El Paso County Water Improvement District No. 1, in Texas. The latter supplies the city of El Paso with about half of its water.

In 2008, after 20 years of negotiations, the two districts and the Bureau of Reclamation completed an operating agreement for the Rio Grande Project. The agreement acknowledged the 57/43 percent division of water and established a means of accounting for the project allocation. The agreement was a compromise to resolve the issue of large amounts of groundwater development and pumping in New Mexico that affected water deliveries to Texas.

Figure 7. Rio Grande Watershed

But significant compliance issues continue with New Mexico's water use associated with the Rio Grande Compact. In 2011, New Mexico took action in federal district court to invalidate the 2008 operating agreement. In response to the lawsuit, and in coordination with the Legislative Budget Board and the Attorney General's Office, the Rio Grande Compact Commission of Texas hired outside counsel and technical experts with specialized experience in interstate water litigation to protect Texas' share of water.

In January 2013, Texas petitioned the U.S. Supreme Court to allow it to file its complaint against New Mexico. That complaint held that unrestricted and extensive groundwater pumping in New Mexico had intercepted and reduced Rio Grande flows apportioned to Texas. Texas is seeking an injunction to stop this excessive pumping and prohibit New Mexico from interfering with the delivery of apportioned Rio Grande water to Texas. Texas is also seeking damages.

In 2014, the U.S. Supreme Court appointed a special master to manage the case and carry out actions on its behalf. The U.S. joined Texas and intervened against New Mexico. In 2018, a unanimous Supreme Court decided that the U.S. could continue to pursue its claim, and then appointed a new special master. The trial was split into two parts, with fact witnesses testifying mainly virtually and expert witnesses testifying mainly in person. The virtual portion of the trial was held in 2021, and the second phase was stayed by the Court pending the approval of a settlement agreed to by the states.

The U.S. subsequently objected to the states' proposed decree. The special master issued a report which recommended that the Court grant the proposed decree over the U.S. objections. On March 20, 2024, the Court heard oral arguments. On June 21, 2024, the Court rejected the proposed decree. The states are currently in settlement negotiations with the U.S. Texas is preparing for potential litigation.

International Treaties

Two international treaties have a major impact on water supplies available to Texas. The 1906 convention between the U.S. and Mexico apportions the waters of the Rio Grande Basin above Fort Quitman, Texas, while the 1944 treaty between the U.S. and Mexico apportions the waters of the basin below Fort Quitman.

Mexico continues to under-deliver water to the U.S. under this treaty. Mexico does not treat the U.S. as a water user and only relies on significant rainfalls to make deliveries of water. The 1944 Water Treaty has a five-year cycle, the most recent beginning Oct. 25, 2020. As of Aug. 31, 2024, Mexico has delivered 400,796 acre-feet of water for the current cycle and has a linear cycle deficit of 947,423 acre-feet of water. Mexico has delivered 23% of the total five-year cycle amount.

This stands in contrast to the U.S. acting in good faith to always supply Mexico its annual allocation from the Colorado River. The Colorado River and the Rio Grande are both covered by the same treaty. Efforts continue to address this problem through the Texas congressional delegation.

Mexico's failure to deliver 1944 treaty water and its overall water-management strategies have negative impacts on Texas, especially in the Lower Rio Grande Valley below Falcon Dam. Mexican drains of irrigation tailwater—including the Morillo Drain, which continues to function below the capacity specified by the minutes of the 1944 treaty—negatively affect salinity levels in the Rio Grande below Falcon Dam. Salinity levels above 1,000 mg/L compromise crops and municipal water systems. The Rio Grande Watermaster monitors salinity levels and provides notifications to stakeholders when salinity in the Rio Grande below Falcon Dam is elevated.

A related issue concerns the accounting of waters in the Rio Grande at Fort Quitman. While the 1906 convention granted the U.S. 100% of all waters between El Paso and Fort Quitman, the International Boundary and Water Commission has allocated the waters equally between the U.S. and Mexico.

Groundwater

TCEQ's responsibilities related to groundwater planning and assessment include:

- Delineating and designating priority groundwater management areas (PGMAs).
- Creating groundwater conservation districts (GCDs) in response to landowner petitions or through the PGMA process.
- Administering the Texas Groundwater Protection Committee (TGPC).
- Supporting efforts to protect water quality in the Edwards Aquifer, the state's only EPA-designated sole-source aquifer.
- Cataloging state water well reports.
- Facilitating 30 TAC Chapter 230, related to groundwater availability certification for platting.

House Bill 4256 of the 88th Texas Legislature established a grant program to plug leaking water wells. TCEQ administers this program as the Leaking Water Wells Grant Program. The 88th Texas Legislature appropriated funds in fiscal 2025 to TCEQ for program staffing and ancillary expenses, and TCEQ is currently developing the program. Funds have not been appropriated to TCEQ for distribution to grantees.

In 2025, TCEQ and the Texas Water Development Board will submit a joint legislative report that details activities in fiscal biennium 2023-2024 relating to PGMAs and the creation and operation of GCDs.

The state's preferred mechanism for groundwater management is GCDs, which are governed by a locally selected board of directors. Under the Texas Water Code, GCDs are authorized and required to issue permits for water wells, develop a management plan, and adopt rules to implement the plan. TCEQ monitors and ensures GCDs meet requirements for adopting and re-adopting management plans.

TCEQ supports the activities of the interagency TGPC. TGPC was created by the 71st Texas Legislature in 1989 to improve coordination among agencies involved in groundwater activities by bridging gaps between existing state groundwater programs and optimizing groundwater quality protection. The resulting statute (TWC 26.401-26.408) sets out the state's groundwater protection policy and describes TGPC's duties.

The statute requires TGPC to accomplish the following:

- Develop and update a comprehensive state groundwater protection strategy.
- Publish an annual Joint Groundwater Monitoring and Contamination Report to cover the activities and findings of TGPC, specifically the status of state agency groundwater monitoring programs and which groundwater contamination cases were handled in the previous calendar year.
- Publish a biennial report to the Texas Legislature describing its activities for the two preceding years, identifying gaps in programs, and recommending actions for legislative consideration to address those gaps. The next report will be submitted to the legislature in 2025.

WASTE MANAGEMENT

Disposal of Low-Level Radioactive Waste

In 2009, TCEQ issued a license to Waste Control Specialists LLC authorizing the operation of a facility for disposal of low-level radioactive waste (LLRW) in Andrews County.

The Texas Low-Level Radioactive Waste Disposal Compact is an interstate compact between Texas and Vermont. LLRW generated in the Texas Compact may be disposed of in the Compact Waste Facility (CWF). The CWF can also accept noncompact wastes provided that the importation is approved by the Texas Low-Level Radioactive Waste Disposal Compact Commission. A separate, adjacent facility, the Federal Waste Facility (FWF), authorized by the same license as the CWF, may accept LLRW and mixed waste (which is waste that contains both a hazardous and a radioactive

constituent) from federal facilities. Upon eventual closure of the FWF, the facility will be owned by the U.S. Department of Energy (DOE).

After TCEQ authorized operations to begin at the CWF, that location received its first waste shipment in April 2012. TCEQ then authorized operations to begin at the FWF, and that location received its first waste shipment in June 2013. Since operations began at both sites, more than 940,000 cubic feet of waste have been safely disposed of, and over $82 million in disposal and processing fees have been collected as revenue for the state through the third quarter of fiscal 2024.

LLRW is produced predominantly by nuclear utilities, academic and medical research institutions, hospitals, industry, and the military. It typically consists of radioactively contaminated trash, such as:

- paper
- rags
- plastic
- glassware
- syringes
- cardboard
- packaging material
- organic material
- used, sealed radioactive sources

Nuclear power plants contribute the largest portion of LLRW in the form of spent ion-exchange resins and filters, contaminated tools and clothing, and irradiated metals and other hardware. LLRW does not include high-level waste and spent nuclear fuel.

By law, TCEQ is responsible for setting rates for the disposal of LLRW at the compact facility. In November 2013, TCEQ adopted a final disposal rate by rule and published the notice in the Texas Register. TCEQ has reviewed and revised the disposal rate as necessary, or at the request of the compact facility operator and the compact generators.

Disposal of Radioactive By-product Material

Licensed in 2008, the Waste Control Specialists LLC site has been open for by-product disposal since 2009. By-product material that can be disposed of by the facility is defined as tailings or wastes produced by, or resulting from, extracting or concentrating uranium or thorium from ore.

Since 2009, the facility has disposed of one by-product waste stream containing 3,776 canisters of waste generated by the DOE's Fernald facility in Ohio.

Underground Injection Control

Underground Injection Control (UIC) is a federally authorized program that was established under the authority of the federal Safe Drinking Water Act. The program's purpose is to protect underground sources of drinking water from degradation that is caused by unsafe injection of fluids underground. EPA delegated Texas as the primary enforcement authority for UIC in 1982 and jurisdiction is shared between TCEQ and the Railroad Commission of Texas (RRC). There are six classes of injection wells. TCEQ's jurisdiction covers Class I, III, IV, and V injection wells.

- Class I wells are used for deep injection of hazardous and nonhazardous wastes.
- Class III wells are used to extract minerals other than oil and gas, and are regulated by TCEQ or RRC, depending on the type of well.
- Class IV wells are only authorized by TCEQ or EPA in special circumstances regarding environmental cleanup operations.
- Class V wells are used for many different activities and are regulated by either TCEQ or RRC, depending on the type of well.

Uranium Production

Uranium is produced in Texas through in situ leaching. Uranium is leached directly out of an underground uranium-bearing formation and pumped in a solution to the surface for processing.

The conventional method used in the past for uranium production created impoundments for disposal of by-product waste. These impoundment sites have all been capped, are no longer accepting waste, and will be transferred to the DOE upon license termination.

Currently, Texas has seven uranium mining licenses comprising seven sites and two licensed uranium-processing facilities.

Managing Industrial and Hazardous Waste

The Resource Conservation Recovery Act (RCRA) establishes a system for controlling hazardous waste from the time it is generated until its disposal. EPA has delegated the primary responsibility to TCEQ of implementing RCRA in Texas.

TCEQ reviews and approves plans, evaluates complex analytical data, and writes new and modified industrial and hazardous waste (IHW) permits and registrations. Texas has 171 permitted IHW treatment, storage, and disposal facilities, and 17 coal combustion residual disposal facilities.

During fiscal 2023 and 2024, TCEQ issued 30 IHW permit renewals, performed approximately 1,191 industrial waste-stream audits, and oversaw remediation of 233 sites.

Managing Municipal Solid Waste

With growing demands on Texas' waste-disposal facilities, TCEQ evaluates the statewide outlook for landfill capacity and strives to reduce the overall amount of waste generated.

In fiscal 2023 (the most recent data available), there were 201 active municipal solid waste landfills in the state. Over 40.1 million tons of waste were disposed of, an increase of 4.9% from fiscal 2021. In fiscal 2023, the average per capita disposal rate was 7.20 pounds per person per day.

At the end of fiscal 2023, overall municipal solid waste capacity was over 2 billion tons, representing 50 years of remaining disposal capacity statewide.

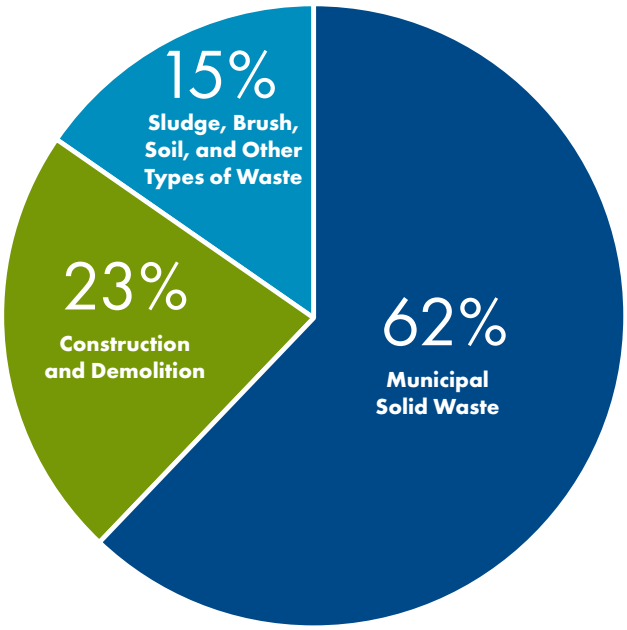
The statewide net capacity decreased approximately 12 million tons, or about <1%, compared with the capacity in fiscal 2021. Throughout the state, the existing trend is for regional landfills to serve the state's more-populous areas, while less-populous areas in West Texas are served by small, arid-exempt landfills that accept less than 20 tons per day.

To assist regional and local solid waste planning initiatives—such as addressing adequate landfill capacity—TCEQ provides solid waste planning grants to each of the 24 regional councils of governments (COGs). The planning initiatives are based on goals specified in each COG's regional solid waste management plan.

For the fiscal 2022–2023 grant period, the COGs received about $10.9 million from TCEQ, which they then distributed to other recipients for projects such as recycling activities, illegal dump cleanups, household hazardous waste collection events, and education and outreach.

The Regional Solid Waste Grants Program Funding Report, Fiscal 2022–2023, includes data collected

Figure 8. Municipal Solid Waste
Texas had 201 active municipal solid waste landfills in fiscal 2023. Municipal solid waste disposal reached about 40.1 million tons.



by TCEQ from the 24 COGs and details the regional solid waste grant activities for that two-year period. The report will be available on TCEQ's website in January 2025.

Superfund

Superfund is a federal program that enables state and federal environmental agencies to address properties contaminated by hazardous substances. EPA has the legal authority and resources to clean up sites where contamination poses the greatest threat to human health and the environment.

TCEQ either takes the lead or supports EPA in cleaning up Texas sites that are on the National Priorities List (NPL). The NPL is EPA's ranking of national priorities among known or threatened releases of hazardous substances, pollutants, or contaminants.

In addition, Texas has a state Superfund program to address sites that are ineligible for the federal Superfund program. This program is the state's safety net for addressing contaminated sites. TCEQ uses state funds for cleanup at sites in the Texas Superfund Registry if no responsible parties can or will perform the cleanup. TCEQ also takes legal steps to recover the cleanup expenses from responsible parties.

A park bench and cypress trees on the bank of the Colorado River. [Credit: iStock]

After a site is proposed for the state Superfund program, either the responsible party or TCEQ proceeds with a remedial investigation, during which the agency determines the nature and extent of the contamination. A feasibility study follows to identify possible cleanup remedies. A public meeting is held to explain the proposed remedy and to accept public comments. TCEQ then selects an appropriate remedial action.

In fiscal 2023, Texas had 110 active sites in the state and federal Superfund programs. No new sites were proposed or listed on the NPL or the Texas Superfund Registry during the fiscal year. Two remedial actions were completed, one at a federal Superfund site in Tarrant County and one at a state Superfund site in Houston County.

In fiscal 2024, no new sites were proposed or listed on the NPL or Texas Superfund Registry, for a total of 111 active sites. Two remedial actions were completed, one at a federal Superfund site in Ector County and one at a state Superfund site in McCulloch County.

Petroleum Storage Tanks

TCEQ oversees the cleanup of contamination of groundwater and soil due to leaking petroleum storage tanks (PSTs). Since the program began in 1987, the agency has received reports of 29,341 leaking PST sites—primarily at gasoline stations.

By the end of fiscal 2024, cleanup had been completed at 28,284 sites, and corrective action was underway at 1,057 sites.

Of the total reported PST releases, about half have affected groundwater.

Leaking PSTs are often discovered when a tank owner or operator upgrades or removes tanks, an adjacent property owner is affected, or the tank leak-detection system signals a problem. Some leaks are detected during construction or utility maintenance. Most tank-system leaks are due to corrosion, incorrect installation, or damage during construction or repairs.

To avoid releases, tank owners and operators are required to properly operate and monitor their storage-tank systems, install leak-detection equipment and corrosion protection, and take measures to prevent spills and overfills.

Tank owners and operators are required to clean up releases from leaking PSTs, beginning with a site assessment that may include drilling monitoring wells, and taking soil and groundwater samples. TCEQ oversees the remediation.

Under state law, cleanups of leaking tanks that were discovered and reported after Dec. 23, 1998, are paid by the owners' environmental liability insurance or other financial-assurance mechanisms, or from their own funds.

The PST State Lead Program cleans up sites where the responsible party is unknown, unwilling, or financially unable to do the work—and in situations in which an eligible site was transferred to State Lead by July 2011. State and federal funds pay for the corrective actions. Except for the eligible sites placed in the program by the July 2011 deadline, the state allows cost recovery from the current owner or any previous responsible owner.

Lost Mine Trail, Big Bend, Texas. [Credit: iStock]

Voluntary Cleanups

The Texas Voluntary Cleanup Program (VCP) gives incentives for pollution cleanup by releasing future property owners from liability once a previously contaminated property is cleaned up to the appropriate risk-based standard.

Since 1995, VCP has provided regulatory oversight and guidance for 3,200 applicants and has issued 2,754 certificates of completion.

In the last two years, the program received 96 applications and issued 122 certificates. Recipients of the certificates report that the associated release of liability helps with property sales, including transactions that would not have otherwise occurred due to real or perceived environmental impacts. As a result, many underused or unused properties may be restored to economically beneficial use.

The key benefit of VCP is the liability release afforded to future property owners once the certificate is issued. The certificate insulates future owners from potential changes in environmental conditions, such as the discovery of previously unknown contamination.

VCP is funded by an initial $1,000 fee submitted with each application. TCEQ invoices participants for oversight costs beyond the initial fee.

Under the Innocent Owner/Operator Program, TCEQ also implements the law providing liability protection to property owners whose land has been affected by contamination that migrated onto their property from an off-site source. In the last two years, TCEQ issued 42 certificates under this program.

Dry Cleaners

Since 2003, TCEQ has been responsible for collecting fees for a remediation fund designed to help pay for the cleanup of contaminated dry cleaner sites. The fees come from the annual registration of dry-cleaning facilities and drop stations, property owners, prior property owners, and solvent fees from solvent distributors.

In 2007, the Texas Legislature established registration requirements for current and prior property owners who wish to claim benefits from the remediation fund—and authorized a lien against current and prior property owners who fail to pay registration fees due during corrective action.

In addition, the use of perchloroethylene was prohibited at sites where the agency has completed corrective action.

In fiscal 2023, there were 1,660 dry cleaner registrations and approximately $2.5 million in invoiced fees; in fiscal 2024, there were 1,632 registrations and approximately $2.4 million in invoiced fees.

Waste Reduction

Hazardous Waste

TCEQ provides technical advice and collaborates to offer innovative approaches and in-person workshops for improving environmental performance through pollution prevention planning.

Altogether, these efforts resulted in reducing hazardous waste by more than 633,000 tons and toxic chemicals by more than 1,225,000 tons during fiscal 2023-2024.

Renewing Old and Surplus Materials

Texas established the Resource Exchange Network for Eliminating Waste (RENEW) in 1988 to promote reusing or recycling industrial waste.

The exchange network has assisted in trading millions of pounds of materials, including plastic, wood, and laboratory chemicals. These exchanges divert materials from landfills and help protect the environment by conserving natural resources and reducing waste. Additionally, participants in the network reduce waste-disposal costs and receive money for their surplus materials.

RENEW is a free, easy-to-use service. Listings are grouped under "Materials Available" and "Materials Wanted" for anyone offering or seeking raw materials.

Through the RENEW website, participants can list and promote opportunities for exchanging at national and regional levels.

In fiscal 2023 and 2024, 98 users signed up to use RENEW, and 114 new listings were posted.

Great blue heron on channel marker in Caddo Lake. [Credit: iStock]

COMPLIANCE ASSISTANCE

TCEQ provides technical assistance, education, and pollution prevention programs that encourage environmental improvements. These programs are focused on agency priorities and align with agency regulatory systems.

Small Business and Local Government Assistance

In fiscal 2023 and 2024, the agency's Program Support and Environmental Assistance Division (PSEAD) responded to 14,685 requests for assistance from small businesses and local governments. TCEQ staff presented compliance information to small businesses and local governments at events, workshops, and webinars,

totaling over 5,562 attendees. Assistance focuses on providing up-to-date information to help the regulated community understand and comply with environmental rules.

PSEAD's Site Visit Program provided resources to meet the requirements of the federal Energy Policy Act (EACT) with a focus on abandoned petroleum storage tanks (PSTs). The program visited 173 potentially abandoned PST facilities in fiscal 2023 and 150 in fiscal 2024. The abandoned PST screening process was developed in fiscal 2020 to establish when a PST can be considered abandoned and removed from the EACT investigation cycle. This process also provides guidance to other parts of the agency for determining what additional assistance or action may be necessary to mitigate risks from these abandoned PSTs.

During fiscal 2023, the Site Visit Program used a grant from EPA to continue conducting assessments and monitoring at potentially abandoned PST facilities in counties affected by Hurricane Harvey. This included risk-based assessments at two additional sites identified in fiscal 2023.

Comprehensive site assessments are only done at sites that grant TCEQ access through access agreements. Since Phase II of the program began in fiscal 2019, the agency has conducted a total of 44 comprehensive site assessments, with 16 sites showing evidence of a release. Cleanups were initiated at these 16 facilities and completed at 16 facilities between fiscal 2019 and 2024. One site was transferred to the State Lead Program in 2019. In fiscal 2024, the remaining one facility was referred to the State Lead Program for remediation and subsequently closed.

Workshops and Webinars

In fiscal 2023 and 2024, PSEAD hosted workshops and webinars to educate the regulated community. Recordings of webinars were made available on TCEQ's YouTube channel and added to the Compliance Assistance Videos webpage. This webpage includes links to previous webinars and other instructional videos developed by PSEAD to assist the regulated community. For fiscal 2023 and 2024 these included:

- One webinar on using NetDMR to submit discharge monitoring reports for facilities with a stormwater authorization under the Multi-Sector General Permit. The webinar had 174 attendees in fiscal 2023.
- Six PST compliance webinars to help owners and operators prepare for their upcoming EACT investigations. In fiscal 2023, three webinars had 397 total attendees. In fiscal 2024, three webinars had 221 total attendees. For both years participants received printed copies of the Underground Storage Tank Compliance Notebook upon request.
- One compliance assistance video with step-by-step instructions on how to submit a renewal application for the Construction Stormwater General Permit in STEERS published in fiscal 2023.

TCEQ's External Relations Division also offers educational opportunities and technical assistance through coordinated workshops, seminars, and educational events, including the annual Environmental Trade Fair and Conference in downtown Austin. During the last two years, the agency sponsored five hybrid events, one virtual event, and three in-person events to provide technical information to 2,067 attendees. The Trade Fair saw 4,053 attendees for the in-person event held in fiscal 2023 and 4,373 in fiscal 2024.

The Critical Infrastructure Division also offers technical assistance, guidance, and educational opportunities to the regulated community through web-based help forms on the division's webpage, and at regularly scheduled training events and workshops.

In fiscal 2023 and 2024, the division's Tier II Chemical Reporting Program responded to 7,893 requests for assistance and offered 42 Tier II workshops and presentations with over 1,817 attendees. The Dam Safety Program conducted workshops on emergency action plans and dam maintenance for 203 attendees in fiscal 2023 and 172 attendees in fiscal 2024.