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Natural OUTLOOK

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Who's Watching over Texas' Rivers and Lakes?

Sampling and analyzing for
water quality is a statewide endeavor



Natural Outlook is published quarterly by the Agency Communications Division at the Texas Commission on Environmental Quality

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Natural OUTLOOK

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Informing Texans about important natural resource issues

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High-tech supervision is coming to the Texas Emissions Reduction Plan. GPS tracking units will soon be deployed to monitor the performance of some grant recipients.

2 Reflash and Refresh the Air

The TCEQ is encouraging fleet operators and heavy-duty truck drivers to curb emissions with some basic engine adjustments.



3 Fines Go to Work for the Environment

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on the back

Sign Up for Custom E-mail Updates

What's the latest at the TCEQ? E-mail alerts now carry news tidbits and program announcements to anyone wanting the service.

COVER: The scenic Frio River meanders through the Hill Country, drawing lots of vacationers during warm weather months. Maintaining good water quality in this and other rivers throughout the state is important to the people and wildlife who use these water bodies. Photo by the Texas Department of Transportation.

Latitude and Longitude

***With satellite technology,
the TCEQ gets an edge on tracking the use of TERP grants***

As the TCEQ enters its sixth year of using incentive grants to obtain emission reductions, the agency is turning to a high-tech tracking system to improve its supervision of the program.

A pilot project conducted in 2006 showed that Global Positioning System (GPS) tracking units can verify whether grant recipients are living up to the requirements of the Texas Emissions Reduction Plan.

The TERP program provides incentives to individuals, businesses, and local governments to cut emissions from polluting vehicles and equipment.

Since 2001, the TCEQ has awarded more than \$408 million in TERP grants, which are issued for the purpose of retrofitting onroad and offroad equipment with cleaner technology; purchasing new, cleaner-burning vehicles and equipment; or repowering mobile units with new engines.

TERP funds have been applied to an estimated 5,900 vehicles and pieces of equipment, mostly in the Houston and Dallas-Fort Worth ozone nonattainment areas. Eligible projects have included purchasing heavy-duty vehicles and equipment, replacing or retrofitting engines, and using qualifying fuels. For example, funds have gone toward purchasing new motor graders and excavators, retrofitting truck engines, and repowering marine vessels.

Based on the overall improvements supported by the grants, the agency projects a total reduction of 101,196 tons in nitrogen oxide (NO_x) emissions. Lowering NO_x levels is crucial for nonattainment areas to reach compliance with the federal ozone standards. In fact, obtaining voluntary emission reductions through incentive funding has been key to the state's strategy for improving air quality.

With the number of grantees growing yearly, the TCEQ is taking steps to automate its monitoring activities to ensure compliance with the TERP contracts. Under TERP, the vehicles or

the vehicle was used, and whether the grant holder still owned the vehicle.

Agency audits and TERP monitoring activities have found some contractual violations. Rather than requiring the grantee to return the TERP funds, the agency will soon have another option—offering GPS units to track contract compliance.

In last year's trial run, a Houston company volunteered to have a GPS transmitter attached to one of its heavy-duty trucks that hauls construction equipment throughout the area. Initially, the tracking was done with a web-based system, which showed the location of the truck every five minutes.

State Funding by Year

Revenue for the Texas Emissions Reduction Plan is generated primarily through vehicle title transfer fees and surcharges on the purchase, lease, or rental of heavy-duty equipment.

The annual allocations to the TCEQ for this program have been as follows.

<i>(in millions)</i>					
FY 02	FY 03	FY 04	FY 05	FY 06	FY 07
\$14.0	\$24.4	\$141.8	\$176.6	\$128.5	\$128.5

equipment purchased with grants must be used, for the most part, in a designated nonattainment area. Usage can be measured in terms of hours of operation or miles traveled.

Grantees must keep a log book and report to the TCEQ every six months. In the case of a delivery truck, the report would show the miles traveled, where

Data collection was then attempted with a client-based tracking system in which a desk-top computer continually collects real-time data from multiple tracking units. The data are stored on a database. Further refinements led to a county-based tracking system that more accurately analyzes the travel patterns of individual and multiple units—in

other words, showing when TERP-financed equipment leaves the eligible areas and for how long.

The agency decided that this tracking system had the most beneficial feature, and is pursuing suitable equipment.

TCEQ officials say that the GPS tracking will initially focus on

“high-risk” grantees—companies that have misused the incentive grants or have a poor history of contractual performance.

Estimates are that the GPS transmitters will become available for this targeted group of grantees in the coming months.

Eventually, grantees with large numbers of vehicles and equipment may be able to volunteer for GPS tracking in exchange for a waiver of the self-reporting requirements. Doing so would save time and paperwork for the grantees, as well as for the agency. ♻️

Reflash and Refresh the Air

Truck drivers and fleet operators can help alleviate emissions

The freight transport industry estimates that trucks carry about 85 percent of the products that reach the shelves of U.S. supermarkets and retail stores. But these deliveries also have an effect on air quality. Fortunately, there are easy ways to reduce the impact that some trucks can have on the environment.

To assist the freight industry, the TCEQ is partnering with the Environmental Protection Agency (EPA) and industry stakeholders to address the estimated 1.3 million heavy-duty diesel vehicles in need of an engine “reflash.”

“This is an easy and inexpensive way for thousands of heavy-duty trucks on the road in Texas to reduce their emissions and help improve our air quality,” says Commissioner Larry R. Soward.

The term “reflash” refers to a simple engine upgrade that can reduce

emissions of nitrogen oxides (NO_x), a principal contributor to ground-level ozone. The process involves plugging an electronic device into the engine and downloading revised software to the engine’s control unit.

The software upgrade, called a “low-NO_x reflash,” modifies the fuel-injection timing that was programmed into many of the engines made from 1993 to 1998 by Caterpillar, Cummins Engine, Detroit Diesel, Mack Trucks, Navistar International Transportation, Volvo Truck, and Renault. These engines were programmed to adjust fuel injection at certain highway speeds to slightly improve fuel economy. This slight improvement, however, also caused the engine emissions to exceed EPA limits for NO_x.

In a 1998 consent decree, EPA and the seven engine manufacturers agreed that when qualifying trucks are taken to certified maintenance facilities for a

The term “reflash” refers to a simple engine upgrade that can reduce emissions of nitrogen oxides (NO_x).

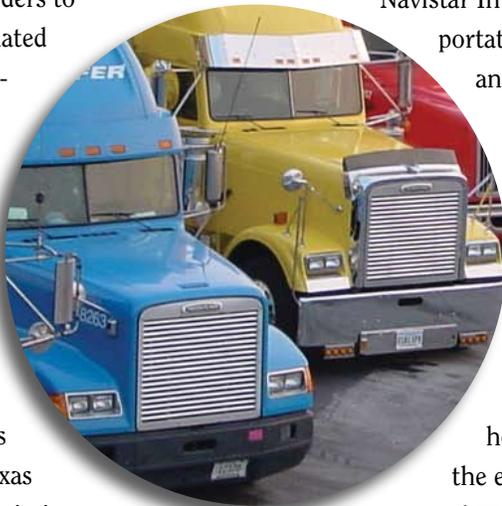
major engine rebuild, the engine manufacturer will provide the reflash upgrade at no cost to the operator.

Since that time, most of the truck engines have not been upgraded. In fact, EPA estimated in 2006 that less than 10 percent had reflash kits installed.

Many truck drivers are not aware that they can improve air quality by simply requesting a low-NO_x engine reflash on their next visit to an authorized dealer or maintenance facility. As a result, EPA and the TCEQ are working to increase awareness of this specific reflash and its benefits to the environment.

For more information about low-NO_x reflash, contact the TCEQ’s Small Business and Environmental Assistance Division at 512-239-3100. Also, EPA has posted information at www.epa.gov/compliance/resources/cases/civil/caa/diesel. ♻️

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Fines Go to Work for the Environment

Supplemental Environmental Projects channel funds to local protection of natural resources

Supplemental Environmental Projects (SEPs) are drawing more participants and sending more money to local communities for environmental protection and improvement. Recent administrative changes approved by the TCEQ are expected to make the program even more accessible.

When the TCEQ finds a violation of environmental laws, the agency and the regulated entity often enter into an administrative order, which regularly includes the assessment of a monetary penalty.

The penalties collected do not stay with the agency, but go to the state General Revenue Fund.

One option under state law gives violators a chance to direct some of the penalty dollars to local improvement projects. By negotiating an agreement to perform or support a Supplemental Environmental Project—in return for an offset of the administrative penalty—the violator does something beneficial for the community in which the environmental offense occurred.

The projects must reduce or prevent pollution, enhance the quality of the environment, or raise public awareness of environmental concerns.

“With SEPs, the penalty money is put to work close to home to help locally with environmental quality,” says SEP Coordinator Sharon Blue. “In most instances, the SEP funds are spent in the same city or county in which the violation occurred.

“We also prefer to stay in the same environmental media. So when a company has been fined for making an improper discharge into a lake or river, the SEP in that case is usually one that improves water quality in that community.”

In fiscal 2006, which ended last August, 174 enforcement cases

concluded with violators directing a portion of their penalties—a total of almost \$3.3 million—to local projects designed to improve air quality, water quality, or waste management. That was the highest number of participants since the program began in the mid-1980s.

Fine-Tuning the Program

When the TCEQ began an extensive review of its enforcement functions in 2004, the SEP program was one of many areas to come under scrutiny. The agency was interested in finding ways to make the program more efficient and effective.

Among the recommendations accepted by the Commission were proposals to streamline and simplify the SEP process.

As a result, TCEQ investigators now raise the option of SEPs much sooner in the enforcement process.

Also, the agency revamped the guidance materials so that prospective participants can more easily learn about the SEP program and the role that they can play in it. (A new brochure



Photo by Galveston County Water Control and Improvement District #1

With SEP funds, the Gulf Coast Waste Disposal Authority helped sponsor a cleanup of Dickinson Bayou in Galveston County. Volunteers at the River, Lakes, Bays 'N Bayous Trash Bash hauled in 19 tons of debris and 300 tires. Removing these materials reduced risks to public health and aided wildlife, which can die from ingesting or becoming entangled in the debris.

is available: *Supplemental Environmental Projects: Putting Fines to Work Closer to Home*, GI-352.)

To further expedite the process, the agency also created a list of pre-approved SEPs. A project selected from this list will be on the fast-track when submitted to the Commission for consideration.

Among the many nonprofits in Texas qualified to receive SEP funding are the Audubon Society, Coastal Conservation Association, Coastal Bend Bay and Estuaries Program, Friends of Laguna Atascosa National Wildlife Refuge, Galveston Bay Foundation, Native Prairies Association of Texas, Hill Country Conservancy, and Trust for Public Land.

All of these groups sponsor a myriad of activities designed around goals such as removing hazards from bays and beaches, improving nesting conditions for colonial water

birds, reintroducing native plants to wildlife habitats, protecting fragile grasslands, and stabilizing shorelines.

Many municipalities and governmental organizations are also on the pre-approved list with projects such as maintaining or expanding regional air quality networks, insulating homes, and improving sewer service to low-income households.

For example, Gregg County is set up to receive SEP funding for cleaning up illegal dump sites, and the city of Houston will apply such monies to household hazardous waste collection events, which accept and properly dispose of paint, motor oil, batteries, and household cleaners—at no charge. Jefferson



Much of the eastern half of Texas was once filled with tallgrass prairie, which provides habitat for grassland birds and creates extremely rich soils. The Native Prairies Association of Texas is putting SEP funds to work to protect and restore native prairies.

Individual Projects

The following are examples of SEP projects from recent years. In each case, a regulated entity satisfied a portion of its assessed monetary penalty for enforcement violations by directing money to a local environmental project.

- An oil refining and distribution firm sent \$298,000 to Jefferson County for an ambient air monitoring station. The equipment included canister sampling, a hydrocarbon analyzer, a gas chromatograph, a 10-meter tower, and a remote communications system. The station, installed near a school, continuously samples and analyzes hydrocarbons.
- A company that supplies polymeric material paid \$37,000 to Ducks Unlimited, a conservation group, for purchasing and planting trees in a wetlands and wildlife management area in Orange County.
- An international energy firm sent \$122,500 to the Panhandle city of Borger for asbestos abatement at three buildings that had no responsible parties to pay for asbestos removal.
- A gas services company sent \$14,700 to the Audubon Society to help control erosion, restore native grassland habitat, and erect nesting towers for chimney swifts, which nest in structures like chimneys.
- A steel products manufacturer gave \$163,700 to the city of Jewett in East Texas for renovations to water and wastewater treatment plants, as part of a project to remove city customers from water wells and failing septic tanks.
- A chemical company gave \$67,400 to a school district in Jefferson County to purchase 35,000 gallons of ultra-low-sulfur diesel fuel and to retrofit two school buses with catalyzed diesel particulate filters, a technology that significantly reduces emissions that are potentially harmful to children.
- An oil refiner gave \$870,000 to the University of Texas Corpus Christi air monitoring and surveillance camera project, which reports the type, volume, and potential sources of air contaminants along the Corpus Christi Ship Channel. Both UT and the TCEQ are evaluating area industrial emissions.
- In a transaction worth \$74,600, an oil company transferred 445 acres along the Pecos River in Crockett County to the TransPecos Foundation. The West Texas land near Iraan was designated by deed as a nature preserve.
- An oil company paid \$11,250 to Henderson County for the cleanup of used-tire dumps and other illegal dump sites that can attract mosquitoes, rodents, and other potential health problems.



Photo by Audubon Texas

The brilliantly colored vermilion flycatcher has found a home at the Mitchell Lake Audubon Center in San Antonio. The Audubon Society has used SEP funds to help convert old wastewater ponds into wetlands and a wildlife refuge.

County has SEP projects ranging from shoreline stabilization to retrofitting and replacing diesel vehicles.

“The dozens of projects on our pre-approved list all directly benefit the environment and are worthy recipients of SEP funds,” says Blue. “Without a doubt, all of these groups are addressing a need that exists.”

One of the groups frequently tapped for funding is the Houston-Galveston Area Emission Reduction Credit Organization, which helps school districts in the eight-county ozone non-attainment area to retrofit and replace older school buses with cleaner-fuel technologies or newer, cleaner buses. The program receives SEP funds from violators of air emissions laws.

Another key recipient is the Texas Association of Resource Conservation and Development Areas, which works with 23 RC&D councils around the state to oversee projects such as coordinating waste-collection events, cleaning up unauthorized trash dumps, and assisting low-income rural homeowners with failing septic systems. These SEP funds usually stem from various waste-related violations such as illegal municipal waste discharge or unauthorized dumping of hazardous waste.

Customized Projects

Some regulated entities still prefer to draw up their own SEPs. To be considered, a project must be environmentally beneficial and the result of a settlement (not an activity already scheduled before the violation occurred).

Also, the SEP should go beyond what is already required by state and federal environmental laws. And it cannot be used

to remediate the violation, or any environmental harm caused by the violation, or any illegal activity that led to the enforcement action. (The violator is already obligated to remediate the violation or environmental harm.)

Not all violators of environmental laws can use the SEP program. The TCEQ evaluates each enforcement case

to decide whether the local proposed project is appropriate, taking into consideration the violator’s history of completing SEPs, its good-faith participation in settling the enforcement action, and its degree of culpability for the violation.

Upon completion of the SEP, participants must file a final report on the actual environmental benefits achieved. This would be reported, for example, as the number of used tires disposed of or the pounds of emissions reduced. Also, the report must document all expenditures.

A list of pre-approved SEPs and other information about the program can be found at www.tceq.state.tx.us/goto/sep. ♻️

Expansion of the SEP Program

Supplemental Environmental Projects have played an increasingly important role in TCEQ enforcement activities. The administrative orders issued in fiscal 2006 required penalty payments of \$9.9 million and another \$3.3 million for SEPs. This was a record year for the number of participants in SEPs. Fiscal 2005 was a record year for SEP payments.

Fiscal year	No. of administrative orders	Penalties required <i>(in millions)</i>	No. of orders with SEPs	SEP payments <i>(in millions)</i>
2006	1,531	\$9.9	174	\$3.3
2005	1,159	8.2	117	4.2
2004	761	5.6	90	2.4
2003	955	5.4	118	1.8
2002	887	5.6	129	2.3
2001	850	4.3	105	1.3

Testing the Waters

The Clean Rivers Program generates reliable water quality data across the state

The crew launches its 19-foot fiberglass boat early in the day, before the shipping lanes get too crowded.

The two employees from the Harris County Environmental and Public Health Department spend a harrowing three to four hours in the Houston Ship Channel dodging freighters, oil tankers, and barge-pushing tug boats. It is all part of their job to obtain water samples from nine locations along one of the busiest commercial waterways in the United States.

About a hundred miles away in South Texas, two staff members with the Guadalupe-Blanco River Authority park near a rickety bridge and arrange heavy equipment in their backpacks. Watching for snakes and swatting at mosquitoes, the biologists climb down a steep embankment, wade to the middle of the stream, and begin conducting biological assessments on aquatic life. Documenting the number of fish and the diversity of species will tell much about the quality of the water in this tributary of the Guadalupe River in DeWitt County.



Measuring stream depth is important when studying the characteristics of a water body. These employees of National Park Service study not just water depth but the condition of the banks along a bayou in the Big Thicket.

These teams—one urban and the other rural—are both part of ongoing water monitoring activities performed through the TCEQ’s Clean Rivers Program. About 1,300 locations throughout the state—streams, creeks, rivers, lakes, and bay inlets—are visited monthly by trained professionals who take samples and conduct a series of tests. After laboratory analysis, the samples will reveal the condition of each water body segment at that location on the day of collection.

This effort produces more than 250,000 water quality measurements each year. All of the information is analyzed at local laboratories, checked for quality assurance, and sent to the TCEQ, where staff verify the numbers and post the data at www.tceq.state.tx.us/compliance/monitoring/crp/data/samplequery.html.

The resulting data sets help create a comprehensive picture of the condition of water bodies in all 23 basins that make up the major river systems of Texas. This accomplishment has



Through seining, representatives of the TCEQ and the Lower Colorado River Authority collect small fish, such as winnows, from Austin’s Bull Creek. A plentiful number of fish and a diversity of species are signs of good water quality.

earned the Clean Rivers Program the reputation of being the largest and most widely coordinated water monitoring effort in the country, according to veteran participants.

“With Texas being so large, gathering the data necessary to assess the status of our surface waters has only been possible through the coordination of combined monitoring resources,” says the TCEQ’s Patricia Wise, project manager of the Clean Rivers Program. “These resources belong not only to the TCEQ and its regional offices, but also to our Clean Rivers partners and their local partners.”

The Early Years

The Legislature created the Clean Rivers Program in 1991 at a time when the coordination of water quality monitoring in Texas was nonexistent. For the most part, monitoring was conducted throughout the state by local governments and river authorities, based on

individual procedures and collection methods.

The TCEQ began contracting with river authorities that had 10 or more counties under their jurisdiction, with the goal of conducting water quality data collection in a manner that produced consistent, reliable results. This way, as Texas planned for the future, state and local officials would have an accurate picture of water quality in all the major water bodies.

The program was also designed to emphasize public outreach and local community involvement, allowing municipalities and stakeholders in each region to take the lead in setting priorities for their monitoring programs.

“Back in the ’70s and ’80s, river authorities were conducting monitoring programs on their own and in isolation,” recalls Gerard Sala of the Sabine River Authority, based in Orange. “Each of us knew our watershed basins better than anyone, but the problem was we



TCEQ photos by Greg Bryant

the Lavaca-Navidad River Authority, the TCEQ, and the Ticket National Preserve.

couldn't communicate our findings. The state wouldn't use them. There was no means for the quality assurance to be verified."

In the world of data collection, water sampling should be conducted according to a strict set of protocols and measured against uniform standards. Otherwise the results are not comparable.

"After the Clean Rivers Program was formed, everybody began monitoring the same way, with the river authorities

acting as the repository for the information," says Sala. "Then we could send the data to the state in a form that the TCEQ could accept. Finally our data could be entered into the state data bank."

This common framework now provides comparable data so that better decisions can be made in locations where site-specific information was previously unavailable.

As a result, about 60 percent of the data included in the TCEQ surface water



quality database is provided by the Clean Rivers Program and its partners.

Sala said that the benefits of this coordinated approach have been far-reaching: "Our knowledge of water



Full-time professionals are not the only trained monitors keeping an eye on Texas waterways. Under a program called Texas Watch, a small army of volunteers around the state conduct their own water quality tests in lakes, rivers, streams, bays, bayous, and estuaries.

Typically, these certified monitors cover sites not included in activities that fall under the Clean Rivers Program. They conduct basic water quality tests and send their data to the Texas Watch headquarters at the River Systems Institute, Texas State University-San Marcos.

In the process, participants gain a better understanding of how everyday activities affect water quality and what individuals and their communities can do to protect it.

Since 1991, hundreds of volunteers have conducted almost 23,000 monitoring trips to more than 850 sites around the state. All of the accumulated data are stored in the program's database at www.texaswatch.geo.txstate.edu.

Volunteers include retirees, teachers, students, environmental organizations, homeowners, and others interested in what

is going on in their local watersheds. Many of the monitoring groups are formed by science teachers who want to provide their elementary and secondary school students hands-on lessons in biology, chemistry, and ecology.

The program is administered through the TCEQ's Nonpoint Source Program and funded by grants from the Environmental Protection Agency, along with a 40 percent partner matching contribution from Texas State and other supporting partners.

In addition to the certified monitoring program, Texas Watch offers environmental education tools and activities, workshops and conferences, and community action projects, says Program Coordinator Eric Mendelman at the Institute.

To become certified monitors, participants attend three-part training sessions to learn water quality sampling and calibration techniques, quality control, and reporting requirements. The volunteers agree to visit their assigned sites each month, on the same day—to maintain a consistent monitoring schedule.

They sample for a core set of parameters including temperature, pH, clarity, depth, conductivity/salinity, and

quality in Texas is greater than it ever was. Therefore, you can address many potential problems before they even happen. When you detect a trend in the readings, it's easier to go back up through the watershed and find what's causing the problem. Then you work together to get the problem fixed.”

Coordination Brings Efficiency

In the process of amassing a wealth of information about water quality, the

Clean Rivers Program has also helped to streamline monitoring activities around the state.

The TCEQ's 15 primary partners, most of which are river authorities, often coordinate with local agencies for the monitoring services of the water bodies in their basins. All participants are trained to use the agency's surface water quality monitoring procedures and to follow a TCEQ-approved quality assurance project plan.

The largest source of data is the Houston-Galveston Area Council (H-GAC). The heavily populated Houston region—and its massive industrial base—represent about 70 percent of the water permit holders in the state, mostly wastewater treatment operators (public and private) and water-rights holders.

The H-GAC coordinates with seven local agencies for collection of water quality data. These agencies range in size from the city of Houston's Health



Texas Watch on Duty

dissolved oxygen. Bacteria monitoring is a new option. While the testing procedures are not as elaborate as those performed under the Clean Rivers Program, the Texas Watch volunteers do serve as additional monitoring resources. Their data are used in both local decision making and basin-wide planning efforts.

Most importantly, says Mendelman, the program gets individuals involved with the environment, helping them understand that everyone has a role in helping to safeguard water quality. That's why the training includes environmental education, with topics such as nonpoint-source pollution, so trainees understand how activities like washing a car in the driveway or applying fertilizer before a heavy rain can introduce contaminants to a storm drain and ultimately to the nearest stream.

Such educational programs can lead to organized environmental protection efforts at the community level, he adds.

In the last year, Texas Watch has been getting more involved in specific water quality protection and restoration efforts,

including the TCEQ's total maximum daily load (TMDL) and watershed protection projects.

One such project is the Arroyo Colorado in South Texas. Over several decades, this coastal waterway has been extensively modified to carry treated wastewater, irrigation return flows, and floodwaters, in addition to barge traffic headed inland to the Port of Harlingen.

The Arroyo Colorado is listed as impaired because it cannot sustain the level of dissolved oxygen needed to support many species of aquatic life.

Texas Watch is playing a role in the project by training and assisting volunteer monitors to collect data at 10 stations along the Arroyo Colorado.

The program will also work with the TCEQ and local stakeholders to form additional partnerships with the purpose of raising awareness of water quality issues. ♻️

and Human Services Department, which is the largest, to the Environmental Institute of Houston, the smallest.

In all, H-GAC monitors an estimated 350 sites, most of which are visited once a month. This means that on most work days some local agency is hauling monitoring equipment to various sites to take water samples.

“With the Clean Rivers Program, the elimination of duplication has been tremendous,” says Todd Running, who manages the program for the H-GAC. “Before, a county monitoring crew would pull up to a monitoring site and take their samples, only to be followed by a city crew, followed by another agency pulling up to the same site.”

That is no longer the case, thanks to coordinated schedules, Running explains. In addition, working together in the San Jacinto River Basin and coastal basins has led to a high level of trust among participants.

“We understand the data that each other has collected,” he says. “We’ve all signed off on the process, knowing the methods that are being used and the quality that is there. This has allowed us to expand the number of monitoring sites and the parameters we measure for.”

Local Concerns a Priority

Through the years, the Clean Rivers Program has developed a communications network that is unrivaled, says Program Manager Laurie Curra at the

TCEQ. “We sit down with our partners and our regional monitoring staff on an annual basis, and we decide where to sample and how to address local priorities and meet the state’s monitoring needs. Through this program, we have developed true partnerships. The rapport throughout the network is excellent.”

In fact, public participation and local decision-making are vital components of the program structure. The focus of each basin’s monitoring program is determined by stakeholder input.

In each river basin, a steering committee sets the priorities for water monitoring. These committees meet at least once a year, drawing stakeholder representatives from industry, agriculture, local government, environmental groups, and the general public. By increasing awareness of water quality issues, the steering committee becomes a forum for stakeholders to contribute ideas and concerns.

“It’s our responsibility to get the public involved,” says Debbie Magin, director of water quality services at the Guadalupe-Blanco River Authority, based in Seguin. “We do everything we can to listen to what they’re saying.”

This could mean meeting with homeowners concerned about the impact of construction on a nearby stream, she explains, or conferring with city officials who worry that pesticides are washing into a lake that supplies their drinking water.

If monitoring results verify these concerns, the basin steering committee may commission a special study to track possible sources of contamination.

While the \$5 million annual budget from the state has remained the same since the inception of the Clean Rivers



In addition to chemical analysis, water assessment includes use of electroshocks, or direct currents into the water, to obtain fish samples. This day of biological assessment in the Pine Island Bayou near Beaumont was conducted by employees of the Lavaca-Navidad River Authority, the Texas Parks and Wildlife Department, and the TCEQ.



Photo by the San Antonio River Authority

In deep waters, aquatic scientists launch a flatboat to collect fish samples through electroshock. Fish collected from the San Antonio River are weighed and measured by a team from the San Antonio River Authority. The health of aquatic life is an important indicator of the conditions in the river or lake.

Program, the partners have made substantial investments. The river authorities contribute their own resources to monitoring activities, in addition to the resources they leverage from their local partners.

“We want to continue coordinating the resources of new partners—entities like cities, counties, and other state agencies—so that we can maximize the use of everyone’s data,” says Patrick Roques, manager of the TCEQ’s Water Quality Monitoring and Assessment Section.

“With the cost of water quality monitoring continuing to rise, people understand the importance of making full use of our resources and being held fiscally accountable,” he says. “With the Clean Rivers partners continuing to network with stakeholders around the state, we can work together to address water quality issues.” ♻️

The Purpose of Field Work

The chemical, physical, and biological data collected and analyzed by the Clean Rivers Program are used to support the TCEQ’s assessment of surface water quality, development of surface water quality standards, and evaluation of wastewater permits.

Individual monitoring plans depend on the actual use of each water body and the potential sources of contamination. Typically, water samples are analyzed for dissolved oxygen, temperature, total dissolved solids, pH, nutrients, and bacteria. Tests also include targeted analyses for toxic substances that may be contained in water, sediment, and fish tissue.

“By providing a documented, consistent framework for collection and analysis, we can make more data of known quality available,” says Laurie Curra of the TCEQ. “This consistency provides comparable data, so that better decisions can be made.”

Every two years, Texas and other states must assess the quality of their surface waters and report to the Environmental Protection Agency the extent that each water body meets water quality standards.

The TCEQ’s Surface Water Quality Monitoring Team publishes this assessment as the *Texas Water Quality Inventory and 303(d) List*. The inventory describes the condition of more than 700 lakes, rivers, and other water bodies, including any concerns for public health, aquatic life, and specific pollutants.

The inventory includes a list of waters that do not meet the water quality standards set for their use, and it identifies the pollutants or conditions that are responsible. These impaired water bodies may be assigned to the TCEQ’s Total Maximum Daily Load (TMDL) program, where staff will determine the sources of pollution and develop plans to get the water body back in compliance with state standards. ♻️

Computer Kaput? Not at Goodwill!

Nonprofit's recycling venture began in Central Texas

A computer crash is terrible news for most people. But for Goodwill Industries, it means one more potential donation to its homegrown recycling business.

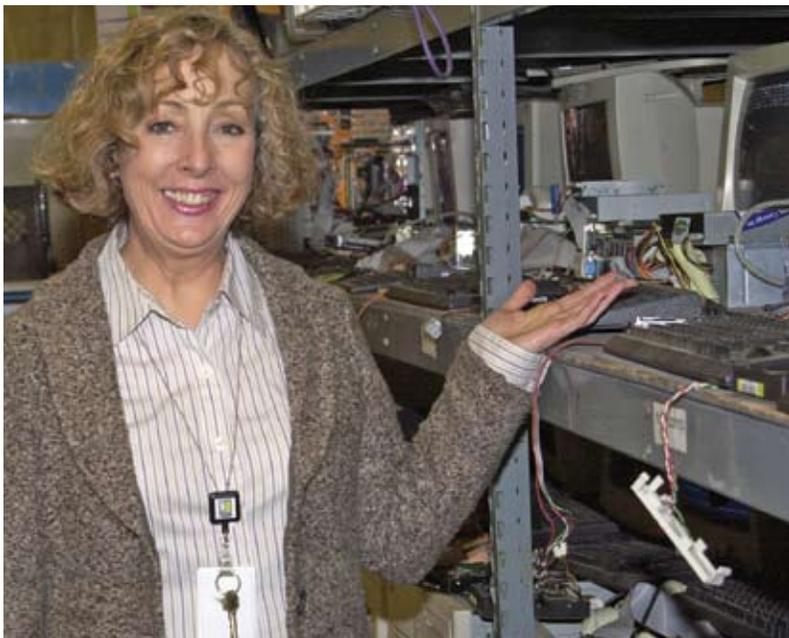
Almost two years ago, the organization began turning unwanted and inoperable computers into a revenue source. Workers at recovery centers in Austin and San Antonio refurbish the units for resale, or they dismantle them and sell the components to recyclers.

Not only is the recycling endeavor making money at these two Goodwill outlets, it saves tons of electronics—and their toxic contents—from ending up in landfills. This program comes along at a time when a staggering number of electronics become obsolete each year as consumers continuously buy faster, flashier models.



TCEQ photos by Doug Falls

Goodwill workers can disassemble a computer unit in less than half an hour. All of the components, even the screws, are sorted for reuse or recycling.



Christine Banks, vice president of Environmental Business Services, oversaw the 2005 opening of the Austin computer recycling center, which was a first for Goodwill Industries. The San Antonio center opened the next year.

The growing electronics trash heap is a major concern for municipalities and landfill operators around the country. Computers and monitors contain lead, mercury, arsenic, cadmium, and other hazardous materials. If not disposed of properly, those contents can leach into the soil and eventually into water sources.

The Goodwill recovery center and computer store made its national debut in Austin in 2005, then opened in San Antonio a year later. Both operations, which were honored with a 2006 Texas Environmental Excellence Award, have served as models for Goodwill startups in several other U.S. cities.

Last year, the Austin and San Antonio centers received a combined 4,000 tons of computers and related parts. About 20 percent was repaired and sold at Goodwill's Computer Works stores. The remaining equipment was taken apart, sorted, and sold to recycling businesses.

“The income from these operations supports our mission, which is to provide employment and job-related services for people with disabilities and other barriers to employment,” says Christine Banks, vice president of Environmental Business Services at the Goodwill headquarters in Austin.

“We’re tapping into a behavior that exists—people are accustomed to donating used clothing and household goods,” she explains. “We just remind them to include their unwanted computers when



Dismantled computer parts pile up quickly. Tables and bins hold assorted cards, cables, adapters, input devices, and accessories. Many of these devices end up on the shelves of the Goodwill resale store.

they’re getting their donations ready for Goodwill.”

When the donated PC and Macintosh systems are received at the Goodwill centers, Banks says, models with Pentium 4 processors or newer are examined to determine whether they work or can be repaired. Everything else is dismantled for scrap.

Recycling markets exist for the used plastic, metals, cables, cards, and many other parts, she notes, adding that some component metals are quite valuable—the gold in processors, for example.

Banks says any brand of computer is accepted at no charge.

Cables, adapters, input devices, cards, accessories, and software are welcome, too.

The equipment can be dropped off at any location sponsored by Goodwill Industries of Central Texas (15 counties) or Goodwill of San Antonio (23 counties).

First, though, computer owners should remove personal data from the hard drive.

The recovery operation is managed by a partnership between Goodwill and Dell Inc. For more information, visit www.austincomputerworks.org or www.reconnectpartnership.com. ♻️

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