WINTER 2008

Natural OUTLOOK

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

PUTTING THE SQUEEZE ON POLLUTING CARS AND TRUCKS

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Natural OUTLOOK

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Exploring environmental issues and challenges in Texas

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With new legislative funding, the Texas Emissions Reduction Plan kicks off 2008 with an offering of $137.5 million in incentive grants and rebates.

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Under the Texas Clean School Bus Program, the state has expanded its mission to reduce the numbers of buses emitting harmful pollution in the presence of students. Funding is available to school districts looking to install pollution-control devices on buses.

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Older vehicles still in use are high emitters of pollution. For that reason, the Drive a Clean Machine initiative is offering to help owners of aging vehicles to buy a newer, cleaner car or truck. The TCEQ has begun accepting applications for vouchers.

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The Resource Exchange Network for Eliminating Waste has long helped businesses and local governments in Texas to find buyers for surplus materials. Now, RENEW has started to operate on a multi-state basis.

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Meet River and Sky
The TCEQ is introducing two floppy-eared canines as the spokesdogs for educational materials designed for youngsters.

COVER: Crushed, pounded, pulverized. That's what will happen to older, polluting vehicles that are turned over to the Drive a Clean Machine program. The TCEQ wants to get these high-emitters off the road permanently. Vouchers can be used toward the purchase of cleaner-running cars and trucks, including hybrids.

Photo ©iStockphoto.com/Joerg Reimann

TERP Grants Get a Boost

The TCEQ gears up to issue more funds for lower emissions

Armed with the most money ever appropriated for the Texas Emissions Reduction Plan (TERP), the TCEQ is preparing to kick off a new round of grants and rebates.

The Legislature approved $290.6 million for TERP grants this biennium, an increase of almost $60 million over the previous period. Of the appropriation, $137.5 million is available for distribution in early 2008.

The agency will soon begin accepting applications for voluntary upgrades or replacements of older heavy-duty vehicles and equipment. Eligible projects range from delivery trucks and transit buses to cranes, forklifts, and locomotives.

"We are fortunate to have such a generous level of funding designed to obtain significant emission reductions from on-road and off-road vehicles and equipment," said TCEQ Executive Director Glenn Shankle. "Lowering emissions from diesel equipment has a direct bearing on air quality. That's why TERP grants can make a significant difference in areas such as Dallas-Fort Worth."

In the next round, $107.5 million will be available for emissions reduction incentive grants and another $30 million for rebate grants.

The emissions reduction incentive grants offset the incremental costs associated with reducing emissions of nitrogen oxides (NO_x) from high-emitting internal combustion engines. NO_x is one of the primary contributors to the formation of ground-level ozone.

The rebate grants are available for diesel on-road and non-road replacement and repower projects (a portion of these funds are reserved for small businesses). Applications for rebates are reviewed and processed on a first-come, first-served basis.

The areas eligible to submit incentive grant and rebate applications are Dallas-Fort Worth, Tyler-Longview, Houston-Galveston-Brazoria, Beaumont-Port Arthur, Austin, and San Antonio.

TERP funds are available to individuals, businesses, nonprofits, school districts, and government agencies that own and operate heavy-duty vehicles or equipment in the eligible areas.

The grant amounts vary, depending on the amount of NO_x reductions each project can achieve.

Since 2001, the TCEQ has awarded $506.2 million in TERP grants and rebates. This covered more than 7,000 vehicles and pieces of equipment, for a total NO_x reduction of about 125,000 tons.

For the opening date of the next grant round, go to **www.terpgrants.org**, or call 800-919-TERP (8377).

What Does TERP Fund?

- Replacement of older heavy-duty vehicles and equipment with newer, cleaner models
- Replacement (or repowering) of older engines with newer, cleaner models
- Limited purchase or lease of very clean heavy-duty vehicles and equipment to expand a fleet
- Installation of retrofit systems on vehicles and equipment to reduce NO_x emissions
- Auxiliary power units on trucks and locomotives
- Idle-stop devices on locomotives
- Idle-reduction and electrification systems to reduce truck idling
- Electricity services for docked marine vessels
- Electricity services and charging systems for electric vehicles and equipment
- Refueling systems for fuels that reduce emissions in all equipment
- Rail relocation and improvements to reduce locomotive idling

TERP
TEXAS EMISSIONS REDUCTION PLAN
A PROGRAM OF THE TCEQ

Note: Some project categories may not be funded during a particular grant cycle.

Clearing the

Grants are available to make school buses a healthier environment

Parents can teach children the safety rules about watching for traffic and obeying crossing guards, but there is a hidden hazard that youngsters might encounter on the school bus—airborne particles.

This invisible pollution can find its way inside the bus cabin, creating potential health problems for the students and the bus driver.

Diesel exhaust contains tiny particles known as fine particulate matter (PM). The crankshaft under the hood can send PM into the bus. These pollutants are also in the tailpipe exhaust, which can cycle into the bus or reach children as they exit the idling bus.

Exposure to diesel exhaust can aggravate asthma, allergies, and other respiratory problems. Long-term exposure may even increase the risk of lung cancer, according to studies.

The TCEQ is issuing grants to help school districts install devices on buses to filter the potentially harmful PM. The Texas Clean School Bus Program began accepting applications in November.

Getting Older Buses off the Road

On a typical day, about 36,800 school buses crisscross routes all over Texas, carrying an estimated 1.4 million students.

The Texas Education Agency reports that a little more than one-third of the buses are older than 10 years. Typically, the older vehicles emit the most pollution.

The Legislature approved $7.5 million in grants to be awarded for cleaner school buses this biennium. Public and charter schools from any part of the state may apply.

"The Texas Clean School Bus Program is designed primarily to address PM pollution that impacts our children and bus drivers," says Commissioner Larry Soward.

Soward said school officials can choose the type of pollution-prevention equipment to install. The approved technologies are:

- closed crankcase filtration systems
- diesel particulate filters
- diesel oxidation catalysts

Other Ways to Cut Emissions

To idle or not to idle?

The TCEQ is urging school bus drivers to turn buses off when they arrive at their destinations. Reducing idling time lowers harmful emissions.

If buses need the engine on to operate the vehicle's flashing lights, the TCEQ recommends changing the circuit configurations so that the flashing lights can be powered by the battery instead of the engine.

Some school districts have already adopted this policy. The Conroe Independent School District instructs its drivers to start their buses each morning "only long enough before departure to allow for completion of the pre-trip inspection."

Also, district policy says that "engines are to be turned off when students are loading and unloading at a campus to reduce the exposure of students to unnecessary exhaust emissions." There are exceptions during freezing weather and for special-needs students who require air conditioning.

The suburban school district north of Houston has about 400 school buses, about half of which have been replaced or retrofitted in recent years, according to Sam Davila, transportation director.

School districts have another option for lowering bus emissions. A simple adjustment to a diesel engine's software will cut emissions of nitrogen oxides. The low-NO_x reflash can be performed when a bus engine is rebuilt. A device is plugged into the engine's electronic controls to download revised software to the engine.

The free upgrades are a result of a legal settlement between the federal government and seven major engine manufacturers. The upgrade applies to buses and other heavy-duty vehicles built between 1993 and 1998 (see "Reflash and Refresh the Air" in the Winter 2007 *Natural Outlook*).

www.texascleanschoolbus.org

All sizes of diesel-powered school buses will be considered for grants under the Texas Clean School Bus Program. Public and charter schools are eligible to apply. For information, visit the TCEQ Web site, or call 512-239-3100.

Applications will also be accepted from third-party stakeholders, like councils of governments. All grant recipients are required to verify that the retrofits were made.

Other Avenues for Funding

While the Texas Clean School Bus Program is being funded for the first time, money has been available from other sources to help school districts replace or retrofit buses.

For almost five years, the TCEQ has issued grants through its Texas Emissions Reduction Plan, a program that has assisted districts in ozone nonattainment areas with bus purchases or engine upgrades.

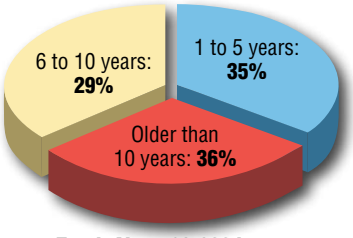
Also, under the TCEQ's program for Supplemental Environmental Projects, violators of certain environmental regulations have the option to direct their fines to local projects, including some that work for cleaner buses. These SEPs are usually channeled through a pre-approved third party, such as a nonprofit that has identified districts in need of assistance.

And the Environmental Protection Agency has its own Clean School Bus USA program, which issues grants for bus replacements and installation of pollution controls.

School Buses on the Road

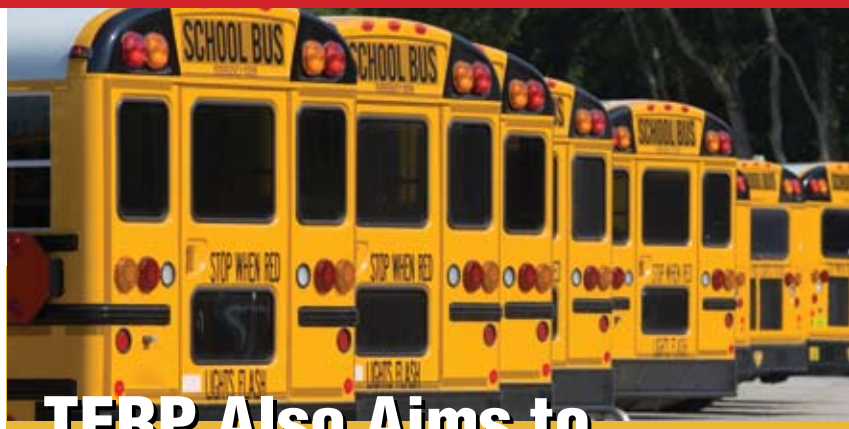
Typically, the oldest buses in a fleet are the heaviest polluters. That is because newer buses must comply with tougher standards. Federal emissions standards for heavy-duty engines took effect in 2004 and were updated again in 2007. Stricter standards come due in 2010, making those buses the cleanest-burning yet.

Public school buses by age, statewide



Total: About 36,800 buses
(most of which run on diesel fuel)

Source: Texas Education Agency, 2005-2006



TERP Also Aims to Reduce Bus Pollutants

Since 2003, school buses have been among the many projects funded by the Texas Emissions Reduction Plan (TERP), which focuses on ozone nonattainment areas.

Grants have been issued to help school districts replace older, polluting buses or to retrofit existing buses to reduce emissions of nitrogen oxides, which contribute to ozone formation.

TERP funds have been directed to school districts located in areas of the state that exceed federal ozone levels and face deadlines to reach compliance. Through TERP, the state had sent almost $900,000 to school districts by the end of fiscal 2007.

TERP Grants Issued for School Buses

School district	Project	Amount of grant
Houston	Use of qualifying fuel	$157,825
Mansfield	Replace 11 buses	94,875
Hays	Replace 11 buses	79,345
Arlington	Replace 10 buses	36,811
Leander	Replace 5 buses	19,466
Kaufman	Replace 2 buses	23,482
Dallas County	Retrofit 257 buses	463,165
Rockwall	Retrofit 12 buses	22,152
	Total:	**$897,121**

Note: TERP grants cover only a portion of the replacement cost.

Protecting the Edwards Aquifer

Regulations and scrutiny focus on one of the most productive aquifers in the U.S.

Of the groundwater supplies regulated by the TCEQ, one is an aquifer that receives extra protection, based on what is happening above it on land.

The Edwards Aquifer extends through many counties in Central Texas, serving as the primary source of drinking water for about 1.7 million people, including residents of San Antonio.

The Edwards is a karst aquifer, making it one of the most permeable and productive groundwater systems in the United States. The replenishable structure supplies water to meet the diverse needs and interests of the region, including farming and ranching, manufacturing, steam electric power generation, mining, households, and recreation.

Its pure spring water supports a unique ecosystem of aquatic life, including a number of threatened and endangered species. Scientists from around the country have studied its distinctive features.

The TCEQ has regulations protecting water quality in the Edwards Aquifer. Also, a special-purpose district—the Edwards Aquifer Authority—regulates and manages aquifer pumpage, and spearheads water conservation efforts in eight counties from Uvalde to Hays.

The quality and quantity of water in the aquifer is a topic of frequent debate, especially as residential and commercial developments rapidly expand across its surface.

The last year has produced a number of important developments that could set the course for protecting and monitoring the aquifer for the coming decade. Among these are:

- The TCEQ received authority to increase the fees assessed for processing proposed aquifer-protection

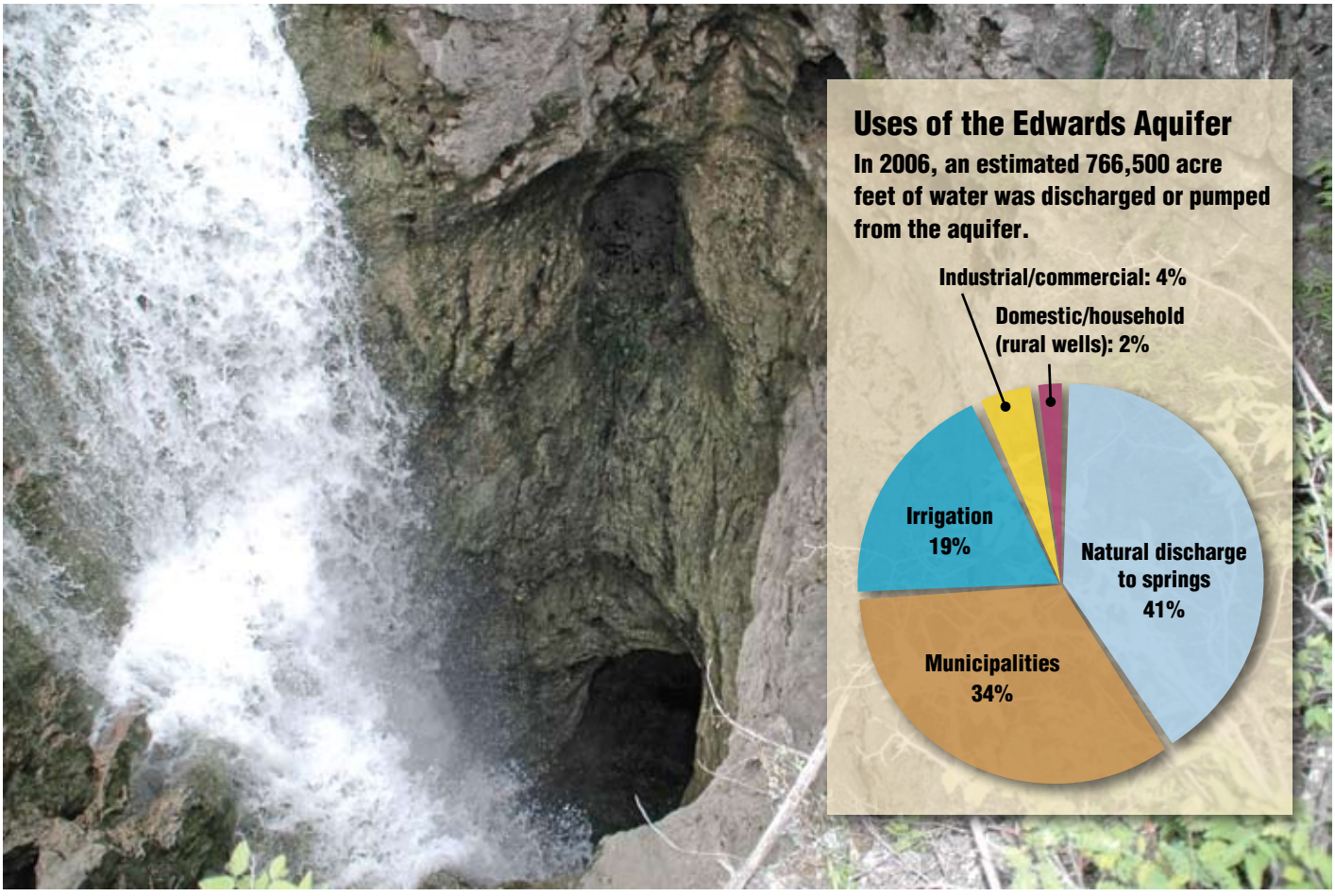
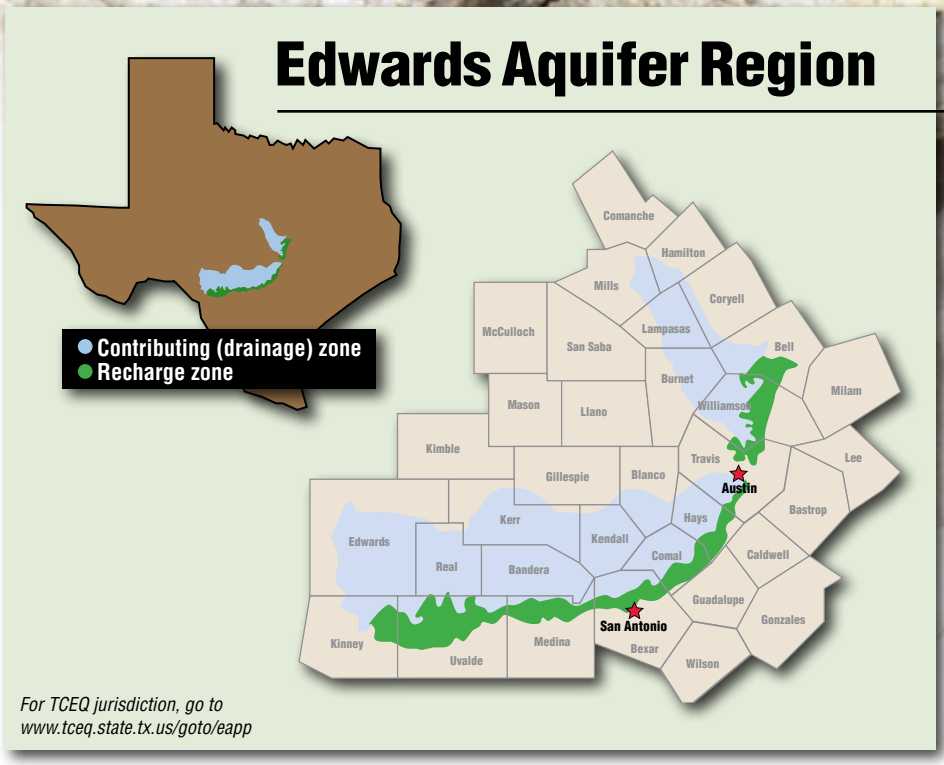


Photo of sinkhole in Medina County courtesy of the Edwards Aquifer Authority. Discharge statistics also from EAA.

plans, and it expanded the staff that monitors regulated activities affecting the aquifer.

- The Legislature raised the ceiling on aquifer pumping capacity but also spelled out cutbacks during critically dry periods.
- The U.S. Fish and Wildlife Service and the TCEQ published an agreement on the voluntary use of new, enhanced measures to protect the water quality of the aquifer and the species living there.
- A new database was created to allow for more comprehensive monitoring of potential pollution in the aquifer.



From the contributing zone of the Edwards Aquifer, water flows south and east across the recharge zone. The Edwards is a karst aquifer, characterized by sinkholes, sinking streams, caves, large springs, and a large subsurface drainage system. The aquifer is so permeable that groundwater levels respond quickly to rainfall.

State Oversight

Because of the unusual nature of the Edwards' geology and biology—and its role as the primary water source for many Texans—the aquifer receives enhanced protection and regulatory oversight.

Rainfall—as well as other surface runoff—enters the aquifer directly through fractures, caves, sinkholes, and other features within the recharge zone. Through these openings, water runs rapidly into the aquifer with little or no filtration to remove contaminants. After traveling underground, water can discharge through wells or natural springs, which feed surface springs and rivers.

Surface streams in the aquifer's contributing zone also provide recharge water.

That means that any activities on the surface, or excavation below the surface, have a direct bearing on the water and inhabitants belowground

With a variety of aquatic species depending on reliable levels of water moving through the aquifer, the issue of diminished flows has been one of constant concern.

The TCEQ requires a water pollution abatement plan for any regulated activity proposed for the recharge or contributing zones. This includes construction of buildings, roads, and highways; clearing, excavation, or anything else that alters the surface; and any other activities that could contaminate the aquifer and its surface streams.

The agency also requires a geologic assessment of all new, regulated developments, except for residential sites smaller than 10 acres. Best management practices must be used during and after construction to treat storm water—creating, for example, silt fences, sand filtration basins, and retention ponds.

The TCEQ also has stricter regulations for aboveground and belowground storage tanks and on-site sewage facilities located in the recharge and contributing zones.

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Online Map Access

In 2005, the TCEQ conducted a major project to update maps of the Edwards Aquifer. The result was revised boundaries of the aquifer regulatory zones in the counties of Bexar, Comal, Hays, and Travis.

The boundary lines and many other features of the region can be seen on the Edwards Aquifer Viewer on the TCEQ Web site.

With the zoom-in tool, users can go through various layers of detail, even finding cross streets and individual addresses. Another tool measures distances.

Look under the "maps" section at **www.tceq.state.tx.us/goto/eapp**.

AirCheckTexas
Drive a Clean Machine.

Trade Up to a C

Vouchers will help more Texans reduce emissions with newer cars and trucks

About 7 a.m., Sarah T. gets into her three-year-old car and begins the drive to work in downtown Dallas. She'll log 14 miles to the office. That is the average one-way driving distance for a Dallas commuter.

Next door, Tommy D. waves at Sarah as he backs out of the driveway in his 14-year-old sedan. He heads downtown, too, taking the same route as his neighbor.

Two typical commuters going to work? Yes, except that the amount of emissions each vehicle will expel is far different.

Sarah's newer car, which is equipped with the latest in emissions controls, will emit only 0.07 grams of nitrogen oxides (NO_x) per mile, or just shy of 1 gram for the trip.

Tommy's car, on the other hand, was made before the adoption of recent pollution standards. His car belches 0.96 grams of NO_x per mile, or more than 13 grams by the time he covers the same distance as Sarah.

The good news in this scenario is that technology has changed for the better, allowing today's cars and trucks to reach peak performance without releasing much pollution.

The not-so-good news is that older vehicles still populate urban streets and freeways, releasing large volumes of pollutants that contribute to ground-level ozone.

Moving on Up

Under the AirCheckTexas Drive a Clean Machine program, the TCEQ is offering to help some drivers replace their older, polluting vehicles.

As many as 1.9 million households in 16 counties could be in the running for vouchers to help replace their older car or truck. Individual vouchers are

Cleaner Ride

in the amounts of $3,000 or $3,500, depending on the type and age of the replacement vehicle.

"We are making a concerted effort to get older, heavy-polluting vehicles either repaired or removed from the road," said TCEQ Chairman Buddy Garcia.

"To that end, the Legislature approved $90 million this biennium. It is a significant expansion of our effort to reduce vehicle emissions in certain areas not complying with federal standards for ozone," he said.

To qualify for vouchers, motorists must have their vehicles registered in designated counties in the Houston, Dallas-Fort Worth, or Austin areas, and fit the income eligibility scale.

For example, a family of four with an annual net income of $61,950 would be eligible to apply.

The vouchers will provide the following:

- $3,000 for a car, current model year or up to three model years old
- $3,000 for a truck, current model year or up to two model years old
- $3,500 for a hybrid vehicle, current or previous model year

Eligibility Guidelines

Participating Counties	
Dallas-Fort Worth Area	
Collin	Kaufman
Dallas	Parker
Denton	Rockwall
Ellis	Tarrant
Johnson	
Houston-Galveston-Brazoria Area	
Brazoria	Harris
Fort Bend	Montgomery
Galveston	
Austin Area	
Travis	Williamson

Household Size	Maximum Net Income 2007*
1	$ 30,630
2	41,070
3	51,510
4	61,950
5	72,390
6	82,830
7	93,270
8	103,710
More than 8	Add $10,400 for each additional member

*Income levels change each February

Technology has changed for the better, allowing today's cars and trucks to reach peak performance without releasing much pollution.

The vehicle being purchased must weigh less than 10,000 pounds, be certified to meet cleaner emissions standards, and cost no more than $25,000. Visit www.driveacleanmachine.org to see a list of qualifying vehicles.

No Smoking Allowed

Ever get stuck in traffic behind a vehicle that's putting out smelly exhaust fumes? Something can be done about the problem, besides rolling up the window.

Contact the TCEQ's Smoking Vehicle Program to report cars, trucks, or buses that emit excessive levels of exhaust.

What's excessive? Any time dirty exhaust pours from the tailpipe for more than 10 seconds, that is a significant contribution to air pollution.

Texas law enforcement agencies have the authority to issue citations, punishable by a fine up to $350, to anyone operating a smoking vehicle on a public highway.

The TCEQ does not investigate or take enforcement action, but it alerts the owner by mail that the vehicle was observed releasing dirty smoke from the exhaust. The agency will encourage the owner to follow proper maintenance and make any needed repairs.

More than 120,000 of these letters have been issued since 2003. Many recipients later reported that they had fixed their car or truck.

To report a smoking vehicle, visit **www.smokingvehicle.org**, or call 1-800-453-SMOG (7664). The anonymous report must be made within 30 days of the occurrence.

Be prepared to provide the Texas license plate number, date and time observed, city, and location.

All of the vehicles being replaced will be scrapped to make sure they are no longer used.

Repairs Still Important

The larger vouchers represent an expansion of the TCEQ's repair and replacement assistance program. Previously, the agency offered vouchers of $1,000 to help owners of older cars who wanted to upgrade to cleaner driving. Typically these were cars that could not pass the state emissions test.

But failing the emissions test is no longer a prerequisite for receiving a voucher. Now, owners of a car or truck that is 10 years or older may participate in the program, regardless of the vehicle's performance on the emissions test.

One component of the assistance program remains the same—financial help is available to repair vehicles that fail the emissions test. Motorists within certain income limits can receive up to $600 for repairs.

In certain counties, passing both the emissions and safety portions of the annual inspection is required for a state inspection sticker.

Fleet Turnover

As newer cars and trucks reach the market and find buyers each year, the overall Texas fleet gets cleaner.

"What we're doing is trying to speed up the process by helping owners of older vehicles buy cars and trucks that are cleaner," said Program Coordinator Bob Wierzowiecki of the TCEQ.

"Not everyone can afford a new car. But driving a new car, or a qualifying used car, is better for air quality than driving a vehicle that's 10 years or older," he said.

Wierzowiecki explained that vehicle emission controls have steadily improved over the years.

A major milestone occurred with the 1996 models "when automobile manufacturers had to incorporate onboard diagnostics, which use the onboard computers to manage and monitor the operation of the engine,

More Information at driveacleanmachine.org

Want to find out further details about the voucher program? The TCEQ Web address above spells out all the qualifying information that motorists need to participate. This includes net income qualifications and the participating counties.

Other vital information includes:

- a list of the cars and trucks the voucher can be applied to
- the names and locations of participating auto dealers
- requirements for the older vehicles to be eligible for retirement

Also, the Drive a Clean Machine program will issue e-mail updates as new information becomes available. Sign up at the Web site for these online alerts.

To contact the program, call (toll free) **800-913-3321**.

transmission, and emission controls. That's when emissions testing started becoming more high-tech," he said.

"Vehicles made in the last decade or so are better equipped to let drivers know when there's a problem. The 'check engine' light alerts the driver to get the car checked. People are more likely to get it repaired than to keep driving till the next state inspection."

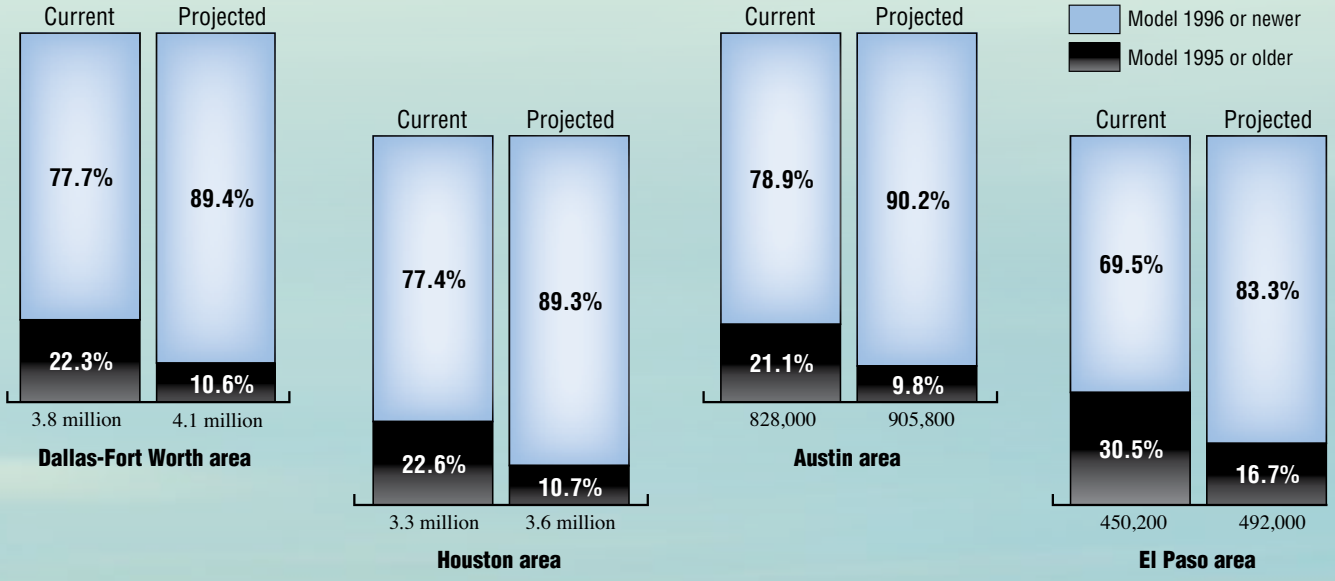
Of the 7.5 million vehicles tested for emission levels in fiscal 2007, more than three-fourths were model 1996

As newer cars and trucks reach the market and find buyers each year, the overall Texas fleet gets cleaner.

Fleet Turnover Means Cleaner Engines

Each year, as consumers buy newer cars and trucks, more of them are driving vehicles with high-tech emission controls. Any vehicle that is model 1996 or newer will have the benefits of onboard diagnostics. Currently, 77 percent of the vehicles registered in the Houston, Dallas-Fort Worth, Austin, and El Paso areas are model 1996 or newer. This segment is expected to grow to 89 percent by 2010. These four regions all have annual emissions testing of vehicles.

Registered vehicles—both current (FY 2007) and projected (FY 2010)



Notes: These numbers only apply to gasoline-fueled vehicles, 2 to 24 years old. Projections for 2010 are based on 3 percent annual growth in the affected areas.
Source: The Texas Information Management System database of all registered vehicles, June 2007.

Testing Emission Levels in 17 Counties

The urban counties targeted for financial assistance for newer vehicles are most of the same counties in which motorists are required to submit to annual emission tests as part of their state inspections.

The exception is El Paso County, which has annual emissions testing as part of its air quality program, but does not participate in state assistance for repairs or replacements.

A total of 3,670 stations are certified by the state to administer the emission inspections.

The tests come in three forms: for vehicles model year 1995 or older, the *accelerated simulation mode* or the *two-speed idle test* (depending on geographical area of the state); for model year 1996 and newer, the *onboard diagnostics test.*

The overall passing rate is 94.2 percent. Vehicles that fail must be repaired and retested.

Counties with Annual Emissions Testing

or newer, said Wierzowiecki. The failure rate for all vehicles run through the inspections was less than 6 percent.

"Cars and trucks are a major contributor to air quality problems," he said. "As you get the newer ones on the road, obviously air quality has a chance to improve."

Thanks to technological advances, today's new vehicles can be up to 98 percent cleaner than those produced 10 years ago, he added.

Overall Strategy

With the state-funded incentives provided under Drive a Clean Machine, 15,000 to 30,000 polluting vehicles could be permanently removed from Texas roads in the next two years, according to TCEQ estimates.

At the same time, more vehicles that are cleaner burning will take to the road each year. That is especially important in areas such as Dallas-Fort Worth where onroad mobile sources represent half or more of the entire emissions picture.

Meanwhile, repairing or replacing polluting vehicles is just one of several strategies in place to lower ozone levels.

The TCEQ has also instituted requirements for various motor fuels, as well as vapor controls at gasoline and refueling stations, and it offers rebates to help replace or retrofit heavy-duty vehicles and equipment (see www.terpgrants.org and www.texascleanschoolbus.org).

All of these programs make up various pieces of a statewide plan to reduce emissions from a host of sources.

In several areas of the state, the pollution from traffic on freeways and even neighborhood streets is one of the leading contributors to formation of ozone.

Got Surplus? Find a Willing Buyer

RENEW can help recycle industrial and hazardous waste

Shoppers on eBay might be looking for an antique. Users of Craigslist could be in the market for a used computer. On RENEW, don't be surprised to find commodities that could fill a boxcar.

The Resource Exchange Network for Eliminating Waste is a free marketing channel for industries, businesses, and governmental authorities looking to sell—or buy—surplus materials, byproducts, and waste. Through the network, entities needing to sell such materials can link up with facilities wanting to buy the very same thing.

The waste exchange generates financial benefits for the participating companies and keeps the surplus materials, some of which are hazardous, from being disposed of in landfills.

One recent RENEW listing was for 10 tons of compound natural rubber available from a boot manufacturer. Suggested use: as a fuel additive or blender. Another company advertised 2,000 gallons a week of product mixtures reclaimed from cans crushed for aluminum recycling. Suggested use: for composting operations.

In fiscal 2007, there were 18 exchanges made through RENEW, representing 11,382 tons of surplus materials. Those transactions allowed companies with surplus commodities to avoid $2.1 million in landfill disposal costs and to earn $1.6 million through the sales.

Prices on the products are determined by the private parties.

Since RENEW began in 1988, more than 469,610 tons of materials have been exchanged.

While the TCEQ has managed the waste exchange since its inception, a major shift occurred in the fall of 2007. Maintenance of the listings and the online catalog transferred to the Southwest Network for Zero Waste, which is part of the University of Texas System. An Environmental Protection Agency grant supplied the funding.

At the same time, RENEW expanded to encompass all the states in EPA's Region 6. Joining Texas are New Mexico, Oklahoma, Arkansas, and Louisiana.

The new regional exchange network is expected to draw more participants as all five states engage in promoting RENEW. Companies seeking or selling surplus materials are now able to enter their listings onto the database and see the results posted almost immediately.

For more information, go to www.renewtx.org.

Sample RENEW Listings

Materials Available

Hydrochloric acid	Copper sulfate
Trichloroethylene	Burner fuel
Polyvinyl chloride	Aluminum hydroxide
Isopropyl alcohol	Styrene butyl rubber

Materials Wanted

Sulfuric acid	Ferrous sulfate
Nitric acid	Methylene chloride
Butyl alcohol	High-density polyethylene
Copper scrap	Spent catalyst

RENEW Exchanges in Recent Years

Fiscal Year	No. of Exchanges	Vol. of Materials Exchanged	Savings in Disposal Costs	Sales Generated
2005	16	11,000 tons	$2.1 million	$1.3 million
2006	20	14,197 tons	$2.1 million	$2.3 million
2007	18	11,382 tons	$2.1 million	$1.6 million

Protecting the Edwards Aquifer *continued from page 5*

The Legislature in 2007 authorized higher fees for the review of water pollution abatement plans, which will take effect in May 2008. Rather than a current cap of $5,000, fees may go as high as $13,000, depending on the project size. The TCEQ received about 700 applications for review in fiscal 2007.

TCEQ engineers and geologists in the Austin and San Antonio regional offices review the plans and perform site assessments before any development occurs.

With the development boom between San Antonio and Austin, the number of investigators assigned to Edwards Aquifer activities in that area has increased from 10 to 17. The agency goal for staff review of each Edwards Aquifer protection plan has been shortened from 90 to 60 days. To maintain this expedited review schedule, the TCEQ requires that all plans be administratively complete before staff begins a thorough review of the technical requirements.

With the economic growth in the region has come a sharp increase in the number of significant enforcement violations. This led the TCEQ to hike the penalties levied for construction activities that begin before the agency grants authorization. Penalties can now be calculated by the day—up to $10,000 per violation.

Aquifer Governance

The Edwards Aquifer Authority was created by the Legislature in the 1990s with a board of directors charged with managing and preserving the aquifer recharge and its aquatic life. The agency manages a groundwater withdrawal permit program for agricultural, commercial, and municipal aquifer users that rely on the underground water supply.

The district has issued about 930 withdrawal permits in its jurisdiction, representing some 12,000 wells, according to Roland Ruiz, spokesman for the authority. The largest aquifer permit holder is the San Antonio Water System.

Recent legislation raised the annual pumping capacity to 572,000 square feet from 450,000 square feet to more accurately reflect the total sum of permits already issued for groundwater withdrawal. Also, pumping reductions during critical stages of drought were written into law.

In addition, legislation created a project to determine the spring flow rates necessary for the survival of endangered and threatened species. The TCEQ and other agencies will assist the authority in developing recommendations for withdrawal rates to maintain target spring discharge levels.

Ruiz said the authority's first decade of operations mostly focused on water supply. "But now that we've established the permit process to help manage quantity, we can turn more of our attention to water quality."

The authority already has programs in place, he said, that set standards for plugging old wells and ensuring that new ones are properly constructed to prevent pollution. The authority also prohibits fuel-storage tanks of certain sizes over the most environmentally sensitive area of the recharge zone.

The authority is considering rules that would regulate the storage of hazardous materials and petroleum products over the recharge and contributing zones of the aquifer, and require all spills to be reported within 72 hours.

State-Federal Agreement

After negotiating several years, the TCEQ and the U.S. Fish and Wildlife Service eliminated duplicate approval requirements for activities in the aquifer region.

The federal agency agreed that the voluntary use of new, enhanced measures in the TCEQ's Edwards Aquifer Protection Program can protect water quality and provide safeguards for species that are listed as endangered or threatened.

Applicants for permits to develop in the aquifer may choose optional enhanced measures to reduce the development's impact on water quality in the aquifer as well as upstream. The optional measures, including best management practices, also address stream-channel erosion resulting from increased impervious

Comprehensive Database

The Edwards Aquifer Water Quality and Biological Data Clearinghouse is a compilation of water quality data drawn from the Texas Commission on Environmental Quality, U.S. Geological Survey, city of Austin, Edwards Aquifer Authority, Guadalupe-Blanco River Authority, Lower Colorado River Authority, San Antonio River Authority, and Texas Water Development Board.

The data, including real-time monitoring readings updated every 15 minutes, are used to assess water quality trends in the aquifer and locate gaps in data coverage.

Go to **http://tx.usgs.gov/edwh**.

Courtesy of the Edwards Aquifer Authority

Almost 90 percent of the Government Canyon State Natural Area in San Antonio overlies the recharge zone of the Edwards Aquifer. This spring, which issues from Edwards limestone, is an important resource to local wildlife.

cover. Applicants can choose best management practices from the TCEQ's technical guidance materials.

The Fish and Wildlife Service agreed that applicants choosing to incorporate optional enhanced measures in their TCEQ-approved plans will not need to apply for separate approval under the federal endangered species program.

This step is not a delegation of federal responsibilities to the TCEQ but an acknowledgment that TCEQ rules and guidance address known threats to endangered or threatened species that rely on the aquifer and its springs.

Database Debuts

In an agreement with the TCEQ, the U.S. Geological Survey (USGS) undertook a mighty endeavor to compile in one location the pertinent data from eight local, state, and federal agencies involved with the Edwards Aquifer.

After 18 months of reviewing and formatting the various data, the result is the Edwards Aquifer Water Quality and Biological Data Clearinghouse, containing an estimated 1.2 million water quality records and 38,000 biological records.

All this information was drawn from more than 4,000 monitoring sites within the regulatory boundaries of the TCEQ's Edwards Aquifer Protection Program. The data reflect the results of monitoring groundwater, spring water, and surface water for factors such as pH, temperature, dissolved oxygen, trace metals, pesticides, nutrients, and bacteria.

USGS is using the data to analyze water quality trends in the aquifer. A report is due to the TCEQ in August 2008.

Variables in Play

The quantity and quality of water in the Edwards Aquifer are constantly monitored as weather and human activity exert regular and sometimes unpredictable influences.

In 2006, an especially dry year for the region, aquifer levels and springflow rates fell so low that the Authority had to invoke mandatory pumping reductions. Then, plentiful rainfall in the first half of 2007 raised aquifer levels to 700 feet, just a few feet short of the record high. The abundant levels even restored the flows of usually dormant springs.

Meanwhile, gone are the days when the aquifer was relatively protected by undeveloped land in the recharge and contributing zones.

The area north of San Antonio, which overlaps some of the most sensitive ecological features of the region, is a hotbed of residential and commercial growth. This places more demands on the aquifer supplies and creates even more sources of potential pollution, such as urban storm water runoff.

Management and reliability of the Edwards Aquifer will continue to depend on development projects that are environmentally sensitive, and the application of regulations designed to ensure protection of the aquifer, consistent with sustainable economic development.

MEET RIVER AND SKY

Move over, Barney and Big Bird, because Texas has a couple of new mascots delivering environmental tips to youngsters.

Say hello to River and Sky, two floppy-eared Texas blue lacys. This dog breed was developed in Texas during the 1800s for ranch work.

The two characters are featured in the Kids portion of the TCEQ's Take Care of Texas Web site (www.takecareoftexas.org), which contains interesting tips and fun facts that relate to conservation and environmental protection at home, at school, and in the community.

River hosts his own fast-paced "Jeopardy"-style game that quizzes players of all ages while teaching environmental lessons. Sky leads children through a game that tests memory skills.

Youngsters also get factoids that could help with schoolwork—for example, the percentage of Texans who recycle (35 percent).

In the future, the mascot duo will take center stage in a number of TCEQ educational materials.

Take Care of Texas offers practical ways for individuals to save money and reduce their impact on the environment. Site visitors can receive a Take Care of Texas bumper sticker by pledging to make lifestyle changes that improve air and water quality and reduce waste.

PD-020/08-01

Take Care of Texas

www.takecareoftexas.org
Online Tips to Do Your Part!

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