

Citizens' Implementation Plan for Cleaner Air in DFW

Air quality in Dallas-Ft. Worth and throughout Texas has become significantly worse over the past five years. As a result, the state's environmental agency is now facing an April 2000 deadline to submit a workable plan to the EPA or face serious economic penalties.

Although it contains some good programs, the state's plan is inadequate from beginning to end. It "adjusts" worse-case estimates downward before even submitting them for elaborate computer modeling. It then builds into that modeling a variety of optimistic assumptions that may or may not reflect reality. It's rules rely heavily on voluntary programs that have failed in other states. It doesn't require deep enough cuts from the largest single sources of ozone-causing pollution, and doesn't take it's own good ideas to their logical conclusions to ensure cleaner air.

In response to the state's deficiencies, citizen-based environmental and public health groups in DFW and Texas are submitting their own plan for cleaning-up DFW's smog. It has five basic parts:

- 1. Cleaner Cars and Fuels**
- 2. Accelerated Clean-up of Vehicle Fleets**
- 3. Cleaner and More Efficient Homes and Businesses**
- 4. Cleaner Industries**
- 5. Early Retirement of Obsolete Plants**

A Plan from the Dallas Sierra Club, Downwinders At Risk, the Ft. Worth Sierra Club, Sustainable Economic and Environmental Development (SEED), Texas Campaign for the Environment, Texas Clean Water Action, and Texas Public Citizen.

January 2000

Why A “Citizens Plan” for DFW Smog?

We The People

Air quality in Dallas-Ft. Worth has steadily deteriorated over the last 20 years, to the point that the area now faces significant federal sanctions after repeated violations of the EPA’s standard for ozone, or smog, pollution.

In response to the current crisis, the state has drafted a plan of 11 new rules aimed at bringing DFW into compliance with the Clean Air Act. According to the state, this plan will reduce ozone concentrations to 124.9 parts per billion (ppb) in DFW by 2007. The current federal standard is 125 ppb.

Having officially proposed this plan, state officials are now seeking public input in a series of hearings, scheduled from January 23rd in El Paso to January 31st in Houston with stops at Austin, Dallas, San Antonio and Longview in between,

Opportunity to make any official public comment on the state’s plan ends on February 14th.

Twice before in the last decade, local and state officials have drafted anti-smog plans with the goal of putting Dallas-Ft. Worth into compliance with the Clean Air Act, only to fail by wide margins.

The third and latest clean-up plan is officially being called a “State Implementation Plan,” or SIP, because it’s now primarily the state’s job to draft such a plan in exchange for federal administrative dollars (although the EPA must still approve it).

A 1999-2000 SIP was necessitated by EPA’s official reclassification of the Dallas-Ft. Worth area from “moderate” to “serious” ozone pollution levels in February 1998 and the failure of the state to submit a workable plan to reduce pollution by a March 1999 deadline. The state agency assigned the task of writing and submitting the plan is the Texas Natural Resource Conservation Commission, or TNRCC. All three TNRCC Commissioners have been appointed by Governor Bush.

After review, the EPA determined the TNRCC’s SIP contained “neither a control strategy sufficient to attain the National Ambient Air Quality Standards, nor adopted rules to implement such a strategy”... and on its face... fails to show the required emission reductions of three percent per year or a total of nine percent for the 1996 to 1999 time frame.”

TNRCC committed to correct these deficiencies by a new March 2000 deadline. Unlike the two previous attempts, failure to submit an adequate clean-up plan in 2000 will have serious consequences. There could be a moratorium on the location of new businesses and industry as well as a suspension of highway monies from the federal government.

After the state’s failure in March of 1999, local leaders in DFW created “The North Texas Clean Air Steering Committee” whose membership consists exclusively of elected officials and business leaders.

Despite requesting representation on the Steering Committee, public health and environmental groups were excluded.

For seven months, this committee held meetings which culminated in a proposal sent to the TNRCC. This is the basis of the state's new clean-up plan now slated for submission to the EPA by April 2000. It is this TNRCC plan that computer modeling shows achieving worst-case ozone levels of 124.9 parts per billion in DFW by the deadline of 2007, barely below the standard of 125 ppb.

Shut-out of official decision-making in drafting the DFW SIP, and knowing how unsuccessful officials have been over the last ten years in producing a plan that actually brings DFW into compliance with the Clean Air Act, many citizens' groups have united to publish their own plan - an alternative "CIP" or, Citizens' Implementation Plan.

The Public Health Effects of Ozone

Ozone is the principal ingredient of smog, also described as the "brown haze" on the horizon of many Texas cities from spring to fall. It's formed when sunlight hits certain chemicals, including volatile organic compounds and nitrogen oxides. These chemicals are emitted from motor vehicles, businesses and industry.

According to the Texas Natural Resource Conservation

Commission, "when inhaled at harmful levels, ozone can cause acute respiratory problems, aggravate asthma, emphysema and bronchitis, lead to hospital admissions and emergency room visits and impair the body's immune system defenses."

Acute, or short-term symptoms of exposure to unhealthy levels of ozone include a shortness of breath, pain during deep breaths and wheezing and coughing.

Children, the elderly and anyone with a history of heart disease or respiratory problems, including asthma, are especially sensitive to ozone pollution.

Using a 1995 estimate of 18.7 million residents, the

American Lung Association has estimated that Texas is home to 674,000 adult asthmatics, over 400,000 pediatric asthmatics and 1.1 million cases of Chronic Obstructive Pulmonary disease.

Dallas-Ft. Worth has an estimated 109,000 asthmatic adults living there, while Houston has almost 240,000. There are an estimated 80,000 asthmatic children in Houston, while DFW hosts almost 61,000. That's half-a-million Texans alone in the two most populous - and polluted - metropolitan areas who are currently at risk from the unhealthy levels of ozone found in their cities during ozone season.

A recent report from the Clean Air Task Force reported that Texas had 4,600 "Respiratory Hospital Admissions," 1,600 "Cardiovascular Hospital Admissions", 13,800 "Total Respiratory Emergency Room" visits, 1,700 asthma ER visits 42,000 reporting "shortness of breath" and 660,000 asthma attacks in 1997.

Sources Of Ozone Pollution

Ozone itself isn't emitted directly by any source in DFW. Ozone pollution is formed when a variety of chemicals coming from all kinds of polluting engines and industrial processes interact with one another and sunlight in the atmosphere. These chemicals include nitrogen oxide (NOx) and volatile organic compounds (VOCs), also called hydrocarbons. Many scientists think particulate matter pollution also contributes to ozone formation.

Ten years ago local, state and federal officials were convinced that they could clean-up DFW's smog by only addressing hydrocarbons. At the same time, many of the same citizens' groups behind this report warned those officials that without reductions in

nitrogen oxide and particulate matter emissions as well as VOCs, their plan would not work. Unfortunately, we were right.

A decade later, all levels of government acknowledge the need to reduce nitrogen oxide, but cuts in particulate matter are still not a part of the government's mix. This is a shortcoming that could still doom the TNRCC's plan - again.

When the TNRCC talks about where ozone-forming pollution comes from in DFW, it's talking only about sources of nitrogen oxide within the four "core" counties of Collin, Dallas, Denton, and Tarrant. And usually, it's talking mostly about cars and trucks.

In these counties, almost half of all nitrogen oxide pollution comes from internal combustion engines in automobiles and trucks, termed "mobile" sources. Another third comes from what are called "off-road" and "area"

sources which include industrial heavy duty equipment, construction equipment, residential emissions, locomotives, airport equipment and aircraft and commercial sources. Approximately 11% is from “point sources” - usually large smokestack industries. In the four core counties, most of the point source emissions are from power plants.

But just looking at these four core counties can be deceiving and short-sighted. Some counties in the larger DFW area, like Rockwall, are home to no big point sources. On the other extreme is Ellis County, immediately south and upwind of the four core counties. It’s home to the largest concentration of heavy

industry in the region - responsible for half of all industrial air pollution in North Texas. Three cement plants and one of the nation’s largest steel mills all are within close proximity to one another in Midlothian. In Ellis County, it’s industry that accounts for 50% of all Nox emissions with automobiles coming in a distant second.

Further to the southeast are huge lignite coal power plants that also dominate their counties’ emissions and send their emissions north to DFW during “ozone season.”

In 1999 TNRCC successfully persuaded the EPA that Houston’s ozone pollution was affecting air quality in DFW to such a degree that it had to wait for Houston’s own clean air deadline to pass in 2007 instead of facing a 2005 date. But the evidence was not overwhelming. Out of the two days from 1995 and 1996 submitted for computer modeling, only the latter showed an impact of over 2-3 parts per billion, or more than the Ellis County cement plants or East Texas power plants. As a last resort, TNRCC artificially manufactured a modeled day of “synthetic wind” that blew Houston’s emissions in a straight line to DFW - a pattern the Commission apparently never found in real life.

After this endorsement of long-range “transport” of air pollution into DFW, citizens believed that the TNRCC would deal effectively with the large upwind point sources that also blew ozone pollution here.

Unfortunately, the Commission has chosen to pull its punches in this category. The same agency that says pollution from Houston is a problem still isn’t dealing effectively with large industrial sources closer to home.

Power plants and other large industries in the four core counties will be required to cut emissions by 88%. In contrast, power plants in East Texas, even though they are much larger, will only be required to reduce emissions of Nox by 50%. Emissions from Ellis County’s cement plants are reduced even less by the TNRCC - only 18% from 1997 levels. These are the smallest cuts being required of any source under the TNRCC’s plan, despite being among the very largest sources of Nox pollution.

Any effective plan for bringing DFW into compliance with the Clean Air Act will have to rely on deep cuts from all sources, small and large alike. Not seeking the most cost-effective reductions from industry now only postpones the inevitable and increases the cost of cleaner air.

<p>TNRCC CLEAN AIR BRIEFING TODAY</p>
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Correctly Estimating the Problem

Thanks to the science and art of computer modeling, the TNRCC's proposed anti-smog plan for DFW achieves compliance with the Clean Air Act on paper - but just barely. Its software predicts a worst-case summer day in 2007, when ozone levels reach no higher than 124.9 parts per billion (ppb). Current federal law requires 125 ppb or less.

TNRCC monitoring shows DFW ozone levels reached as high as 164 ppb in 1999. Levels above 170 ppb have been recorded in years past, and the TNRCC modeling is supposedly based on these worst days. However, the Commission reduces projected worst-case numbers before even starting to plan by eliminating what it says is bias in the data. Such configuring reduces DFW's worst case numbers by 13% or more. Citizens would argue that it's the original estimate that is the true "worst-case." It would be more realistic to accept that number at face value and draft your plan accordingly.

Citizens' groups believe that the TNRCC's plan leaves too little room for error, and that its ozone clean-up goal does not adequately protect the public's health and sets the plan up for eventual failure. There is more that could be done, both to better understand the true extent of the problem, as well as how to fix it.

As it stand now, any sizable error in overestimating how many motorists will really drive five mph less when the TNRCC wants them to, or underestimating how much the Ellis County cement plants really affect air quality downwind, or any number of variables, will doom the TNRCC's projections.

Indeed, all levels of government already seem to be ceding defeat in this first TNRCC plan with the inclusion of a "mid-course correction," or revision, in 2003-04.

Some of the TNRCC proposed anti-smog plan for DFW will go a long way to clean the region's air. However, the plan needs to be more thorough, more fair and based on more realistic numbers and assumptions in order to reach attainment of EPA standards for air safe and healthy to breathe.

A more adequate plan would reduce ozone concentrations by more than a hair's width below the allowable standard. It would not only clean-up more than minimally required by law, but continue to build sufficient additional reductions to counteract new sources of pollution and meet expected tougher air quality standards in the near future.

A better plan would be based on real-time monitored peak ozone levels in the 140-170 parts per billion range that are being recorded in the DFW area, not TNRCC's "bias adjusted" lower numbers.

Planning should also be based on prevailing winds which are transporting air pollution from large stationary sources to the east and south, including the Ellis County cement kilns, into the DFW area. Currently these well-

known seasonal patterns are being overshadowed by atypical meteorology and these sources' emissions are being under-represented in the computer modeling that drives the entire clean-up plan. TNRCC staff admit that the wind patterns dominating the official "worst case" example are not representative of those in a typical DFW summer.

It's essential that clean air strategy for the Dallas- Ft. Worth area include programs which can actually achieve the projected reductions in emissions. Unfortunately, some of the strategies being proposed by TNRCC are unlikely to do so. Some measures, such as speed limit reductions, voluntary trip reductions and car-pooling have proven ineffective in other cities and are not likely to produce projected reductions.

TNRCC's plan is also relying heavily on the active cooperation of 8 "outlying counties" in North Texas to implement a whole slate of "voluntary measures." So far, officials in all these counties have not endorsed those measures, while some are openly hostile to them. Even one of these counties refusing to participate in the plan can mean the difference between success and failure.

With widespread and continued public outreach education about the important public health effects of these

behavior changes, and other incentives, a slow shift in behavior may occur in concerned and responsible individuals and businesses. But we should not count on that as essential components of the attainment plan. Without adequate systems for enforcement and monitoring, emission reduction programs will fail.

All the effort being expended in trying to get DFW and other Texas cities into compliance with federal law is based on the older, one-hour ozone standard. If ozone levels reach a certain concentration in the air for more than an hour at a time, it means it could be unhealthy to breathe and there's a violation.

However, EPA is now in the process of acting on scientific evidence showing that exposure to lower levels of smog over longer periods causes ill health effects in vulnerable populations, such as children and the elderly. It has proposed a new eight hour ozone standard which lowers the "acceptable level" of ozone pollution to which a person should be exposed over an eight hour day.

This stricter, health-based limit will be harder to comply with than the one hour standard. For example, in 1999 DFW had 21 violations of the one-hour ozone standard on 10 days, while it had 138 violations of the proposed eight hour standard on 37 days.

Although still mired in a court battle, EPA is proceeding with a new ozone standard. A new round of reductions in both nitrogen oxide and volatile organic compounds will undoubtedly be needed in addition to those already being proposed for compliance with a standard that is already medically obsolete.

Also looming on the horizon are new standards for tiny particulate matter emissions, that many scientist believe are not only harmful in their own right, but also add to ozone creation. It is possible that monitoring data for the DFW area will show that it is also in violation of these standards and will need to establish a entirely new strategy for compliance with another part of the Clean Air Act.

Because many sources of pollution which emit large amounts of ozone-forming pollution also release large amounts of particulate matter, a more comprehensive ozone clean-up might go a long way in solving other air quality problems.

Citizens' Implementation Plan

If the region is going to meet its goal of cleaner air to breathe by the end of this decade, citizens' groups believe a stronger plan than the one TNRCC has proposed is needed to clean-up DFW smog

For our plan, we've endorsed some TNRCC programs, expanded others, and taken ideas from other states that are also trying to significantly reduce ozone pollution.

Non-profit groups that fund themselves through garage sales and small donors don't have the money or access to the computer modeling the TNRCC is using to estimate the success of its new rules.

However, we do make recommendations in our plan that we know would go beyond the TNRCC's clean-up in some areas, based on the state's own modeling results to date.

Our groups urge the state to use the time between the close of official comment on its rules in February, and its deadline to submit a

workable plan to EPA in April, to increase the breadth and width of its programs so as to better enhance public health and better ensure compliance with the Clean Air Act.

TNRCC Plan

Citizens' Plan

Cleaner Cars and Fuels

Emission Standards for Cars

TNRCC proposes California emissions standards for new cars statewide by 2004. This could reduce emissions of ozone-forming nitrogen oxide pollution by as much as 25%. Costs would range from an average of \$107 per car (less than 1% of the purchase price) to \$209 for a truck. An additional benefit is that at least 10% of cars are required to be zero or super-ultra low emitting vehicles.

Citizens support. Governor Bush has decided to follow New York's and Massachusetts's lead by urging the adoption of California auto emissions standards. With these three large markets committed to cleaner cars, the types of engines made for the entire nation will shift and benefit Texas' industries that manufacture the methanol, batteries and other technologies that will power tomorrow's fuel-cell and hybrid cars.

Emissions Testing and Inspection

Tougher auto emission tests would be required in the 12 county North Texas region. These tests would include computer diagnostic checks for 1996 and newer vehicles, and "dynamometer" tests for 1995 and earlier cars. It would exempt cars two years old or younger. Random remote sensing would be used to detect high-polluting cars and trucks.

Citizens support. Census figures show the number of commuters coming and going into the central DFW area from outlying counties has increased significantly.

Cleaner Fuels

Reduced sulfur content in gasoline would be required, a change that can be made at refineries. Reformulated gasoline and cleaner diesel fuel would be sold throughout the 12 county North Texas area by May, 2002.

Citizens support. Reduced sulfur content in gas can significantly decrease ozone-forming pollution. Automakers can build cars that run on gas lower than even the 20 parts per million sulfur content being proposed by the state.

5 MPH Speed Limit Reduction

This rule would require current 70 mph highway limits to be reduced to 65 mph and current 65 mph highway limits to be reduced to 60 mph within the entire 12 county North Texas region. According to the TNRCC, “legal authority to implement this program may have to be clarified during the next legislative session.”

Citizens don't believe this measure can be effectively enforced or quantified.

Accelerate the Clean-Up of Vehicle Fleets

Vehicle Retirement

Government-sponsored vehicle auctions would retire 1000 cars a year instead of re-selling them to the public. Funds would be generated in the private sector for the purchase of another 500-1000 of the oldest, most polluting cars and trucks, or paying for their tune-ups.

Approximately 10% of our cars were built before modern pollution controls were required in 1981 and they produce about 25 % of the pollution from all cars and trucks. Unfortunately, many of those who drive these cars are those who are least able to afford a replacement.

Citizens support using funds raised by assessing market-based vehicle emission fees during car registration to buy these old clunkers and give the owner a voucher that can be used toward an 1981 or newer car certified to have working pollution controls.

Diesel Engine and Equipment Replacement

Replacement of any heavy duty diesel equipment exceeding 50 horsepower in the off-road construction and mining industries with newer, less polluting diesels by 2007. It exempts agriculture equipment.

Accelerated purchase of newer diesel off-road equipment by 2007.

A 1997 diesel engine emits 200 times as much ozone forming nitrogen oxide as an average 1997 car. A diesel engine will last twenty years and will be rebuilt twice over its lifetime.

Citizens support replacing the dirtiest of all diesel engines, not just the ones in heavy duty equipment. A diesel engine replacement program has been highly effective in the Los Angeles basin and has resulted in NOx reductions costing less than \$3,000 per ton.

A program to replace, or repower old and dirty diesels used in commercial trucks, busses, off-road equipment, locomotives and ships, with newer cleaner diesels or alternative fueled engines should also be a priority. Beside reducing ozone, there are other benefits to such a replacement program. Diesels are a major source of particulate matter and the EPA has recently decided that diesel exhaust is "highly likely" to be a human carcinogen.

Cleaner Engines for Off-Road Equipment

Requires the adoption of California off-highway gasoline equipment standards for new sales by May, 2002. It exempts agricultural and construction equipment of less than 175 horsepower, recreational equipment, stationary and marine vessels and equipment on tracks.

Citizens believe there should be no exemptions for recreational equipment, stationary engines, marine vessels, locomotives or other equipment running on tracks. Incentives should be given to accelerate replacement of older, dirtier equipment.

Four Hour Morning Ban on Construction Equipment

Would begin June 1, 2001 and apply to the entire 12 county North Texas region during the ozone season (June to November). It covers all diesel powered construction equipment over 50 horsepower, exempting safety and wet concrete operations.

Citizens don't believe this measure can be effectively enforced or quantified. In addition, this merely postpones emissions of nitrogen oxides until later in the day, rather than reducing them.

Voluntary Mobile Emission Reductions

Includes the entire 12 county North Texas area and includes incentives or funding off-highway sources. Aimed at rail, road upgrades and replacement of farm, recreational, marine vessels and garden equipment.

Citizens believe this is an inadequate measure to deal with the exemptions awarded these categories of emissions in the rule referenced above. Instead, there should be an accelerated program of replacing older and dirtier technologies with newer and cleaner ones.

Voluntary reductions can not be counted on to meet air quality standards.

Cleaner & More Efficient Homes and Businesses

Energy Conservation in Buildings

Local governments would be encouraged to implement the building standards listed in the 1998 International Energy Conservation Code for new homes, promoting energy efficiency and lessening the need for electric power generation. Cost has not been estimated. No deadline for action.

Citizens believe it would be more successful to implement the EPA's Energy Star program and the updated 2000 model of the International Energy Conservation Code with a achievable deadline for significant progress. These would produce increased energy savings up to 50% above today's standard new home, while saving consumers money every month in lower utility bills.

Efforts should be made to update rental homes, apartments and commercial space, and existing single family housing by retrofitting with energy efficiency measures at the time of lease or resale. Financing would be available through loans with short pay-back periods, or outright grants for the worst offenders.

Citizens also support a major appliance replacement program that would see older, less efficient models of refrigerators, stoves and other appliances swapped for newer, more efficient models.

Low Emission Water Heaters and Small Boilers

A first wave of new emission limits would be applied statewide starting in 2002. A second, more stringent set of limits would be applied starting in 2005.

Citizens support this measure.

Smarter Growth

The TNRCC plan has no provisions for encouraging smarter urban development.

Citizens believe that we should build our cities in ways that reduce future smog growth. Neighborhoods could be designed around bicycle paths, rapid transit stations and other smog resistant developments. Restrictions on unbridled growth such as Flower Mound and Keller have tried can serve as models for other North Texas cities.

Traffic Control, Rapid Transit and Alternative Transportation

These include highway improvements in congested intersections and freeways, HOV lanes, Vanpooling, Park and Ride, Bus and Rail fare reductions, Bicycle and Pedestrian paths.

Many of these ideas have been tried and failed. Their effectiveness is also very hard to quantify or verify. However, citizens support using highway monies to support high speed rail and other rapid transit options.

Cleaner Industries

Utility Power Plants & Other Large NOx Polluters in the DFW Area

Power plants within Collin, Dallas, Denton and Tarrant Counties would be required to reduce their emissions by 88% from 1997 levels with installation of new pollution control technologies.

Citizens support this measure. Reductions from power plants are among the cheapest available to officials and have a significant impact on ozone levels.

Utility Power Plants Outside DFW

Power plants outside the four “core” counties in DFW would have to reduce their emissions by 50%. This includes the state’s biggest lignite coal plants in East Texas.

Citizens believe these large plants, which emit pollution that blows into the DFW area, should also have to reduce their emissions by 88%, the same as smaller power plants within Dallas-Ft. Worth itself.

Cement Plants in Ellis County

TNRCC is requiring adoption of rules that it says will reduce pollution from the three cement plants in Midlothian, Ellis County by 30 to 40% from emissions in “baseline” years. The North Texas Clean Air Steering Committee recommended a 50% cut in emissions from 1997 levels from these plants.

Citizens believe the Ellis County cement plants, which are the first, fourth and sixth largest stationary sources of ozone-forming pollution in the region, should be held to the same standard as local utility plants - 88% cuts - because they are capable of utilizing the same kinds of pollution control equipment as power plants.

Grandfathered Industrial Plants

At this point, only a voluntary program is being proposed for aging “grandfathered” industrial plants which are not power plants.

Citizens believe these out-of-date plants should be required to reduce their emissions by at least 50% from 1997 levels.

Airport Operations

Airports in the four “core” counties of Collin, Dallas, Denton and Tarrant counties will be required to use 100% electrically-powered ground service vehicles by 2003. This program allows for an alternative reduction measures by the airlines as long as those reductions equal the amount of pollution reduced by full electrification.

Citizens support this measure.

Early Retirement of Obsolete Plants

Officially, plant retirement is not a part of the TNRCC plan. However, TNRCC Commissioner Ralph Marquez has stated publicly that if some utility plants can't meet the new clean air standards the TNRCC is proposing, retirement and replacement should be an option.

Utility companies say between 8 and 15 older plants statewide probably can't meet new clean air standards without expensive upgrading. In such cases, plant retirement should be required, rather than costly retrofitting. Such retirement and replacement reduces emissions of ozone forming pollutants, as well as particulate matter and global warming gases.

DFW is downwind of more old, obsolete "wet process" cement plants than any other metropolitan area in the nation. Replacing these with modern "dry process ones" could reduce air pollution from the Midlothian cement plants by 70%. TNRCC officials have unofficially endorsed a retire/replacement strategy for aging power plants, but not aging cement plants.

For more information about this Citizens' Implementation Plan and other DFW clean air issues, contact one of the following groups:

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