

A Reprint from *Tierra Grande*, the Real Estate Center Journal

OZONE OPTIONS

Cities face difficult air quality choices



By Harold D. Hunt

Air quality rapidly is becoming one of Texas' most important issues. The Texas Natural Resource Conservation Commission (TNRCC), with the approval of the Environmental Protection Agency (EPA), will finalize a number of plans during the next few months putting several state regions on track to significantly reduce air pollution. These plans, known as State Implementation Plans (SIPs), are tailored to a region where improved air quality is required. When implemented, SIPs may have a profound impact on regional residential and commercial real estate markets.

Four Texas regions are in "non-attainment" for ozone, a classification implying failure to meet national ambient air quality standards under the federal Clean Air Act. The four regions are Houston-Galveston-Brazoria (eight counties), Beaumont-Port Arthur (three counties), El Paso (one county) and Dallas-Fort Worth (four counties).

Five other metropolitan areas are designated "near non-attainment" by TNRCC. Austin, San Antonio, Corpus Christi, Victoria and Tyler-Longview-Marshall are classified near non-attainment for several reasons. They may briefly have exceeded air pollution standards. They also might have been in non-attainment but since have come into compliance, or they may have a future potential for air quality attainment problems.

Ozone is one of six air pollutants for which federal standards have been established. The other five are carbon monoxide,

sulfur dioxide, nitrogen oxides, particulate matter and lead. Under current standards, the ozone level cannot equal or exceed 125 parts per billion (ppb) for one hour at the same monitoring station during more than three days in three years. As of this writing, the Houston-Galveston-Brazoria region had registered 43 days where the one-hour standard was exceeded in 1999 alone.

Ozone high above the earth is helpful, blocking out harmful ultra-violet radiation. However, ground-level ozone, a component of smog, is unhealthy. High concentrations of ground-level ozone may burn eyes, irritate throats and aggravate respiratory problems such as asthma. The most favorable conditions for ozone formation occur on days with no cloud cover, low wind and high temperatures. Ozone is produced by a chemical reaction between volatile organic compounds (VOCs) and nitrogen oxides (NO_x) in the presence of sunlight.

Five classifications of ozone severity were established under the federal Clean Air Act Amendments of 1990. In order of severity, they are *Marginal*, *Moderate*, *Serious*, *Severe* and *Extreme*. The Clean Air Act mandates a host of different pollution control requirements and deadlines for each classification. The Houston-Galveston-Brazoria region is designated *Severe*. Dallas-Fort Worth and El Paso are designated *Serious* non-attainment areas, and Beaumont-Port Arthur currently is designated *Moderate*.

A new and more stringent eight-hour ozone standard is scheduled to take effect in July 2000. All four Texas regions now in non-attainment under the one-hour standard would be in non-attainment under the eight-hour standard as well. However, the five additional areas currently classified as near non-attainment also may be reclassified as non-attainment areas under the new standard.

The eight-hour standard may not be implemented in its present form. The EPA is currently appealing an appeals-court decision striking down the new standard as unconstitutional. In the decision, a three-judge panel stated that "the EPA failed to state intelligibly how much pollution is too much."

Sources of VOC and NO_x, the elements in ozone formation, typically are lumped into five *source categories* to track their origins. They are *biogenic* or plant sources, stationary point sources, area sources, off-road mobile sources and on-road mobile sources. The SIPs being developed by the TNRCC to reduce the level of ozone will most likely require reductions of VOC and NO_x from all but the biogenic sources.

No one source is capable of bearing the total burden necessary to reach attainment status. TNRCC and the metropolitan planning organizations in the non-attainment regions have struggled with how to proportion the necessary reductions from each source while minimizing their impact. Computer modeling is used to simulate ozone reduction through the implementation of more than 100 possible pollution-control strategies.

Stationary-point sources include industrial or commercial operations, such as refineries, power plants or bakeries, that emit enough VOCs and NO_x to be tracked individually. The thresholds for classification as a stationary point source are lowered for each level of severity. For example, Dallas-Fort Worth's bump up to *Serious* non-attainment status in 1998 required that stationary point sources emitting 50 tons or more per year of VOCs be regulated by the TNRCC. Under *Moderate* status, Dallas-Fort Worth businesses were regulated only when they emitted 100 tons or more per year.

Each increase in non-attainment severity subjects more businesses within the region to regulation. According to Howard Gilberg, an environmental attorney with Dallas-based Thompson & Knight P.C., **the number of small- and medium-sized businesses that must bear the cost of air quality regulations recently increased tenfold when Dallas moved from *Moderate* to *Serious* non-attainment.** Gilberg also says that most of these businesses were surprised to find that they must be regulated by the TNRCC.

A number of the stationary point sources were "grandfathered" in 1971 when the Texas Clean Air Act was revised. Facilities that were already in existence or under construction at that time and have not made any modifications that significantly increase air emissions still can legally release air pollutants, including VOCs and NO_x, without a permit. Grandfathered facilities account for about one-third of the air pollution from Texas industrial plants.

Power plants represent a large share of the grandfathered Texas stationary point sources, with some plants producing thousands of tons of VOCs and NO_x each year. Recent state legislation has put pressure on these facilities to reduce their emissions voluntarily during the next several years. TNRCC also launched an emission credit program in 1995 to allow companies to buy and sell pollution credits within each non-attainment region. Among its many benefits, the program offers grandfathered facilities a way to immediately contribute to improving overall air quality while new pollution-control technology is installed.

Area sources are stationary facilities that are too insignificant to be identified individually. Examples of area sources include dry cleaners, restaurants, paint shops and gasoline stations. Their emissions are estimated from local data and currently operate under an exemption from the TNRCC.

Many area sources, including auto paint and body shops, manufacturers of wood products, dry cleaners and gas stations, are at risk of being moved into the stationary point class when non-attainment regions are reclassified into the more stringent non-attainment categories. Commercial real estate mar-

kets in non-attainment areas may suffer if businesses choose to relocate to avoid air quality regulations. For example, the *Dallas Business Journal* reports that a **McKinney kitchen-cabinet manufacturing plant recently chose to relocate to Tennessee rather than face investments in expensive equipment to meet stricter EPA requirements on its VOC emissions.** Businesses also may choose to remain in the state but relocate outside of non-attainment areas to avoid regulation.

Off-road mobile sources consist of aircraft emissions, marine vessels, recreational boats, trains and almost any other engines, including lawn mowers and construction equipment. National Association of Home Builders officials argue that restrictions on these emission sources will affect home building dramatically, especially if a controversial proposal to limit construction hours from noon to midnight is implemented. Equipment used to load and unload port cargo also would fall under this category. Houston port officials argue that any restriction in the number of hours equipment can be operated could severely restrict port activity.

On-road mobile sources include autos, trucks and other vehicles that primarily use roadways. Emission levels from these sources are estimated by the EPA through computer modeling. The non-profit Texas Environmental Center reports that vehicles account for 24 percent of the state's air pollution. Some of the strategies proposed for reducing emissions from this source include reduced speed limits, cleaner gasoline and diesel fuels, accelerated retirement of older vehicles and tougher inspection and maintenance programs. Such strategies are designed to promote the use of vehicles that produce lower emissions, reduce the number of vehicle miles traveled and advance the use of cleaner or alternate fuels.

On-road mobile emissions may well have the greatest effect on Texas real estate markets but not for the reasons just stated. If non-attainment areas fail to meet any of the many EPA criteria for future attainment, federal sanctions—including loss of federal highway funds—can be imposed. This scenario is known as a "conformity lapse." The funds still are authorized, but they cannot be spent on projects that further increased road capacity.

Furthermore, any road project within the region is subject to approval by the Federal Highway Administration and the

Texas cities face loss of federal highway funds for failing to meet national air quality standards.

EPA. The Houston-Galveston-Brazoria non-attainment region now faces a conformity lapse because they have not been able to reduce emissions at the rate stated in a previous plan of action to the EPA. Dallas-Fort Worth may experience a conformity lapse in July 2000 as well. The length of time to remove a conformity lapse varies widely. Non-attainment areas must submit a transportation plan to the Federal Highway Administration, as well as a new conforming SIP that reduces emissions enough to satisfy the EPA, to get a lapse removed.

Three of the state's near non-attainment areas also may fall into a conformity lapse in July 2000. San Antonio, Austin and

Tyler-Longview-Marshall may have their federal highway funds frozen, depending on whether the eight-hour ozone standard is accepted or rejected by the courts. In the past, regions were allowed a one-year grace period to produce a conformity plan if they fell into non-attainment; however, a 1997 court ruling removed this provision. Under the new law, a region immediately falls into a conformity lapse if the ozone standard in effect (either the one-year or eight-year, depending on the courts) is not met based on the last three years of data. ♣

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Atlanta's Air Quandary

Texas is not the only state with regions facing the loss of funds for new road construction. Atlanta, Georgia, is in a 13-county non-attainment area that has been under a conformity lapse since January 1998. Until the area complies with the Clean Air Act, it cannot draw on federal highway funds that make up 80 percent of the region's new road budget.

Atlanta's air quality problem stems primarily from a large volume of vehicular traffic. The traffic is a result of the metro area's phenomenal job growth, more than twice the national average since 1994. Job growth has, in turn, produced an explosion in new suburban development. Atlanta's suburban population increased almost 40 percent outside the urban core from 1990 to 1996, while growing only 2 percent inside the city limits. Commuters in the metro area drive more miles each day to work than in any other city in the nation, averaging about 36 miles round-trip.

The Georgia legislature has taken a regional approach to the air quality issue by creating the 15-member Georgia Regional Transportation Authority (GRTA) headed by the governor. The agency has been given total control over all transportation and land-use decisions. Any "uncooperative" counties in the non-attainment region face the loss of state grants and revenues. GRTA can stop any new development inside the region. It also can choose to build and operate a mass transit system and force the myriad of surrounding jurisdictions to pay for it.

Although many short- and long-term solutions to Atlanta's air quality problem are being discussed, the debate over the merits of mass transit versus new highway construction has been especially contentious. One view is that a mass transit system connecting a few high-density employment "nodes" is the solution to long-term air quality attainment. More road construction would bring longer commutes, as well as continued congestion and smog. New housing also should be high-density projects located in urban Atlanta and around employment nodes.

Urban infill is encouraged partly because it would increase the viability of mass transit and offer many homeowners the option to walk or bicycle to work. Proponents of this solution also note that urban home values are increasing at twice the rate of suburban values. Several urban mixed-use developments currently are under construction in Atlanta that will allow people to work, shop and live in the same area.

Opponents argue that congestion and smog are a result of not enough roads. They further argue that many of the roads currently in place are set up to move traffic from the suburbs to the inner city. A different highway structure is needed to move suburbanites across perimeter counties to emerging employment centers outside the urban area. Mass transit, opponents argue, is a poor transportation choice that almost never pays its own way and requires heavy subsidization to survive.

Forcing potential homeowners to live in higher-density housing would limit housing choices, distorting the market. A strong demand for suburban homes on larger lots still exists, especially for families with children. The market should determine the location of new housing development.

Opponents of the high-density, mass transit argument agree that home values will increase substantially in urban areas if cheaper suburban land is not developed. However, higher home values are not always a desirable outcome. Although higher values are beneficial to existing homeowners, first-time homebuyers would suffer. Low-income families especially would be hit hard, putting the possibility of homeownership farther out of their reach.

Atlanta appears to be moving toward the high-density alternative. Some federal funds are being diverted from road projects to mass transit systems, an option that is allowed, under certain conditions, during a conformity lapse. More Atlanta developers are being convinced that urban infill development is the right approach to cure the ills of poor air quality and congestion. Several Texas cities shortly will face the same choices as Atlanta, and it remains to be seen which path they will choose. ♣

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Tierra Grande (ISSN 1070-0234), formerly *Real Estate Center Journal*, is published quarterly by the Real Estate Center at Texas A&M University, College Station, Texas 77843-2115.

Subscriptions are free to Texas real estate licensees. Other subscribers, \$30 per year, including 12 issues of *Trends*.

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