

HOUSTON CHRONICLE OUTLOOK ARTICLE  
Before we build more: Freeways bad for our health  
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Area population is projected to increase by more than 50 percent - to a whopping 7.6 million - over the next 20 years. To accommodate this growth and reduce traffic congestion, the region is beginning a massive construction project to widen the Katy Freeway from 11 to 20 lanes and our regional government - the Houston-Galveston Area Council - has proposed a comprehensive 2025 transportation plan that includes, among other transportation projects, 12,900 new lane miles.

Because the area's ozone smog levels are among the nation's highest and violate federal health-based standards, we must demonstrate that new transportation projects will not jeopardize area efforts to reduce our air pollution - and this must be done before any new roadway lane miles are added. Computer modeling suggests that these projects will not worsen the area's ozone pollution, although some of the model assumptions have been questioned.

Legally, this is all that is required to address health and freeway pollution.

Does it? No.

A rapidly growing body of medical research from top investigators and universities around the world demonstrates that: (1) current levels of freeway pollution are associated with increased illness and death among people who live or go to school near freeways; (2) tiny particles, combustion gases and toxic chemicals from vehicles - not ozone - are what is of primary concern along freeways; and (3) health effects correlate primarily with the number of vehicles per day on a freeway and the distance of those exposed from the traffic.

The majority of the studies show that health effects begin along roadways that carry 20,000 or more vehicles per day, and are strongest for persons who live, work or go to school within 300 meters (about three football fields) from the edge of a freeway. For commuters, health effects also correlate with the average number of miles driven per day and with the amount of stop-and-go traffic.

Houstonians may be more at risk from freeway-induced illness than residents in many other cities because: (1) our freeways are bigger and carry more vehicles than in many other cities; (2) we have no regulations that prohibit building, living, working or going to school close to a heavily traveled roadway; and (3) Houstonians currently drive more miles each day - approximately 39 miles per person - than residents of any other city in the United States (with 68 miles per day projected for 2025).

The number of vehicles that use our most traveled freeways is already mind-boggling:

. The area around Loop 610 and U.S. 59 currently carries approximately 320,000 vehicles per day - one of the highest throughputs in the world, and the six-mile segment of the Katy carrying the most traffic currently averages about 280,000 vehicles per day, which Rice University researchers estimate will increase to 397,600 vehicles per day once the Katy expansion is completed.

Although we often focus on the components of tailpipe exhaust- toxic combustion particles, benzene, formaldehyde, carbon monoxide, nitrogen dioxides and a host of other goodies - vehicles also release gasoline vapors, vaporized oil and particles from paint, brake linings and tires. In addition, diesel exhaust from construction vehicles, the heat of the engines and road surface, road dust and toxic chemicals evaporating from the road surface contribute to the toxic soup, and the mass is kept suspended over the roadway and nearby neighborhoods by the continuous traffic. Roadway noise is another pollutant that is increasingly linked with serious health and quality-of-life concerns.

Elsewhere, measurements along freeways generally show pollutant levels to be several magnitudes higher than measurements taken at area monitors, and pollutant levels are generally even higher inside vehicles. For example, a study of 140 commuters in the Los Angeles area found that vehicle-related emissions such as carbon monoxide and benzene were generally three to four times higher inside an automobile than at area monitoring stations.

What does this mean relative to health?

More than 100 major studies have been published over the last decade documenting the relationship between freeway pollution and health. For example, a recent study by the New York State Department of Health found that children who lived within 200 meters of a high-traffic roadway were nearly two times more likely to be hospitalized for asthma than similar children who lived further away from traffic. A 2002 report of approximately 1,500 children in Munich, Germany, found that cough during the first year of life correlated strongly with the level of vehicle-related air pollution measured in front of the child's home.

In yet another study, epidemiologists found that children exposed to higher levels of traffic-related pollution before the age of 3 were more than two times more likely to develop asthma than similar children exposed to lower levels of traffic pollution. And a 2003 study in Los Angeles found that pregnant women who lived close to high-traffic roadways during pregnancy were more likely to give birth prematurely or have a low-weight baby, both of which put the child at risk for health problems in life.

Adults are affected as well. A 2002 Harvard University study of heart disease in 14 U.S. cities found that increasing residential exposure to particulate pollution from roadway traffic was strongly associated with an increased risk of being admitted to a hospital for heart problems. And yet another study, published in 2003, found that individuals who lived within 200 meters of a busy roadway were 7 percent more likely to die from a stroke than those who lived more than 1,000 meters (about ½ mile) from the roadway.

Still other studies have linked traffic-related pollution to respiratory infections, lung cancer, allergies and some birth defects. Regular and long commutes have been associated in some studies with obesity, an increased risk of cancer, back problems and social isolation. And freeway-associated noise is increasingly linked with sleep deprivation, learning problems and increased blood pressure.

Given that most of us in this region rely on our automobiles, what can we do?

Let's start by keeping health foremost in all our decision-making. Let's learn from what other urban areas are doing. For example, in California, schools cannot be built within 500 feet of a freeway. Other regions have lined freeways with trees and replaced frontage roads with green buffer zones. We should also prohibit residences from being built close to freeways, and should relocate homes and schools in particularly vulnerable locations. Incentives to encourage area residents to: carpool; walk, bike or take the bus or rail to work or school; live and work in the same area; and buy clean-running vehicles will also reduce the health burden. To reduce your exposure when driving, don't tailgate, avoid idling and stop-and-go driving whenever possible, and keep as far away from polluting cars, trucks and buses as you can. Also keep your vehicle well-maintained and invest in the cleanest-running vehicle you can afford.

The Houston region has some of the finest research institutions and intellect in the world, and a long legacy of the can-do spirit. There is no reason that we can't grow healthy using that same entrepreneurial expertise and Texas spirit. We need to work together - now and at all levels - to make health a No. 1 priority in all our decision-making and long-term planning. This region and its children have the right to no less.

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