Houston-Galveston Area Council's Clean Air Action

Clean Air Quarterly

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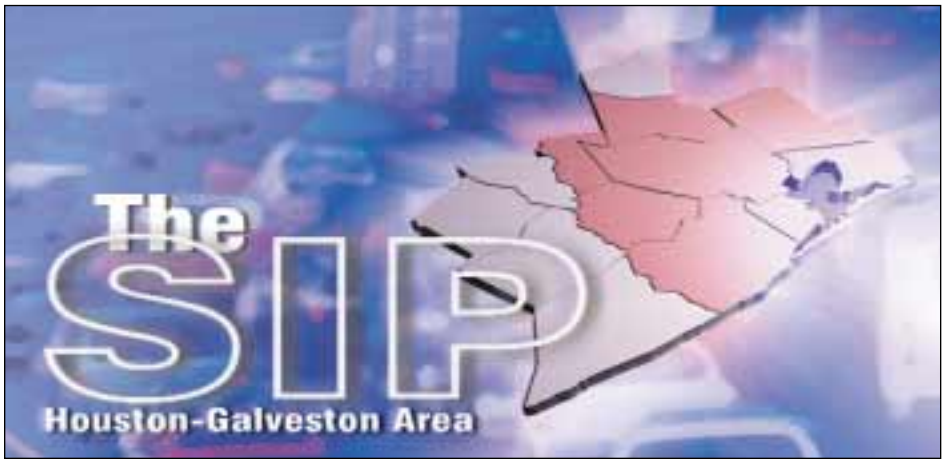
Houston-Galveston Area State Implementation Plan to be Adopted by TNRCC in December

On September 22, Texas Natural Resource Conservation Commission (TNRCC) officials wrapped up a week of public hearings for the Houston-Galveston State Implementation Plan (SIP) for ground-level ozone. TNRCC heard constructive advice, suggestions and criticizisms regarding the proposed smog plan for the region. The suggestions received by TNRCC officials differed vastly, from stricter enforcement of industrial compliance to spill-proof gasoline cans and the modification of urban development.

Earlier this summer, TNRCC approved the proposed smog reduction plan to bring the eight counties of the Houston-Galveston-Brazoria area into compliance with the National Ambient Air Quality Standards (NAAQS) by 2007. Under the 1990 Clean Air Act Amendments (CAAA), the United States Environmental Protection Agency (U.S. EPA) set a deadline of 2007 for the eight-county (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller) region to meet the federal health standard for ozone. All eight counties reside in the congressionally approved Consolidated Metropolitan Statisical Area's (CMSA) severe ozone nonattainment area and therefore must equally abide to the smog reduction



plan. If the region fails to come into compliance, all counties will face the suspension of federal funding for transportation and the loss of local resources to finance area projects.

TNRCC modeling shows that the eight-county area produces a total of 1,238 tons of nitrogen oxide (NOx) and 722 tons of volatile organic compounds (VOC) per day. NOx, a by-product of high-temperature combustion, is the main ingredient in the region's ozone problem. In order to meet the health standard, U.S. EPA officials set a reduction of approximately 80 percent of the nonattainment area's emissions of NOx. The major sources of the emissions come from on-road mobile sources, such as cars and trucks; non-road mobile sources, such as construction and landscaping equipment; and point sources, such as major industrial plants. The reduction measures for all three sources are outlined in the Houston-Galveston Attainment Demonstration SIP.

To learn more about the attainment demonstration control measures visit www.tnrcc.state.tx.us. Following the conclusion of the public comment period, TNRCC will select the measures that will be included in the new eight-county smog plan that will be adopted by the Commission in December. Once adopted, the plan will be submitted to U.S. EPA at the end of the year. The EPA then has 90 days to accept or reject the proposed budget. TNRCC may also adopt shortfall rules as expeditiously as is practical, but no later than July 31, 2001. The various measures will be phased-in or implemented between 2001 and 2005. TNRCC officials hope that enough progress will be made through technology to avoid some of the measures altogether.

Ozone Guidance to be Distributed to Area Schools

This fall, the City of Houston's Bureau of Air Policy is distributing a "Guidance on Ozone Pollution and Physical Activities" for children and athletes in the eight-county area. The guidance is a consensus-approved document that outlines the courses of action to protect public health. The consensus group includes the City of Houston, Harris County, the Houston-Galveston Area Council's (H-GAC) Clean Air Action program, the TNRCC, the U.S. EPA, the National Weather Service, industry, education and environmental groups.

Superintendents, principals, teachers, coaches, and other appropriate persons, are encouraged to use this document as a tool in making decisions regarding outdoor activities during periods of high ozone pollution. Children who spend a lot of time outdoors are particularly vulnerable to the effects of ozone smog.

The guidance is based on the U.S. EPA's Air Quality Index (AQI). The index values describe the severity of ozone pollution. The index value describes the health quality of the air — good, moderate, unhealthy for sensitive groups, unhealthy, very unhealthy, and hazardous. A color—green, yellow, orange, red, purple, or maroon—will be issued to indicate the index value.

The guidelines recommend various measures to restrict physical activities for each color and descriptor. For example, when a level orange (unhealthy for sensitive groups) is issued, the guide suggests that susceptible individuals, primarily children with heart or respiratory disease, should minimize outdoor activity and healthy individuals with noticeable health effects associated with existing conditions should minimize outdoor activity.

In addition to these guidelines, the consensus group has also developed an ozone awareness program targeted at a younger audience. The "Andy Airedale, the Air Quality Watchdog" program teaches elementary and preschool students about the new AQI and precautionary steps to take during exceedance days. Andy Airedale can be downloaded at ww.cleanairaction.org.

Residents of the eight-county area can receive ozone advisories through the Internet by visiting www.hcoem.org. The new notification system provides real-time public health infomation on days when any one of the 25 regional monitors record ozone levels above the health standard.

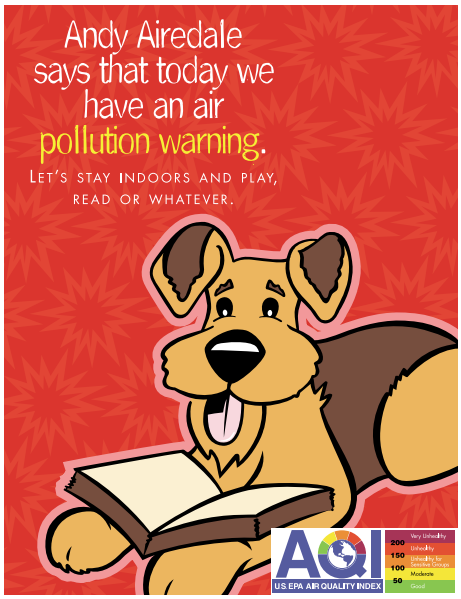
Air Pollution Website aimed at High School Students

Older kids too can learn about the severity of air pollution in our area. Southern California's South Coast Air Quality Management District (AQMD) has created a Student Health Web Site for high school students. The web site includes a health effects section, a parent's section, a homework help section, and links to air pollution, asthma and the environment. It can be viewed at www.aqmd.gov.

TNRCC's New Website: www.cleantexasair.org

TNRCC has created a new web site about the air quality in Texas. It provides information, resources and contacts to help people find out more about regional air quality and what they can do to help reduce emissions and clean the air. People who log on to the site can also connect to numerous air quality related links that discuss transportation, energy conservation, and educational resources. To learn more about "doing your share for cleaner air," visit: www.cleantexasair.org.

Download Andy Airedale
www.cleanairaction.org



EPA Proposes Major Action to Clean Trucks and Buses

On May 17, 2000, the U.S. EPA proposed a major action to clean heavy-duty trucks and buses by reducing diesel's sulfur content by 97 percent, smog-causing nitrogen oxides by 95 percent and particulate matter by 90 percent.

To achieve these tough standards, the proposal requires diesel and gasoline engines to meet stringent emission measures. These standards will result in the first broad use of emission control devices, such as the three-way catalysts and soot traps on engines. Diesel engine manufacturers will be able to meet the new standards through a three-year phase-in approach between 2007-2010. Gasoline engine manufacturers will have to meet the standards by 2007. To date, most diesel trucks and buses have not used pollution controls devices that have been used on cars for over 25 years.

The U.S. EPA will also implement a new cleaner fuel into the market. To facilitate a smooth transition to new clean diesel by June 2006, the proposal outlines various flexible phase-in approaches for the diesel industry.

Currently, an older, dirtier diesel vehicle can emit almost 8 tons of air pollution every year. By addressing diesel fuel and engines together as a single system, this proposal, if implemented, will reduce 2.8 million tons of smog-causing nitrogen oxides emissions each year. This amount is the equivalent of taking 13 million trucks off American roads. Furthermore, the emissions of particulate matter (soot) will be reduced by 110,000 tons each year. Every year smog and particulate matter account for 15,000 premature deaths, one million respiratory problems, 400,000 asthma attacks, and thousands of cases of aggravated asthma.

To learn more about the EPA proposed action on cleaner diesel trucks and buses, please visit www.epa.gov/otaq/diesel.htm.

Southern California Adopts New Alternative Fuel Rules

Earlier this summer, South Coast Air Quality Management District (AQMD), southern California's air-quality regulatory agency, passed a new set of rules that will hopefully lead to "a sea of clean-fuel vehicles in California and the country." The twelve-member board of AQMD unanimously voted to require all new vehicles bought by transit agencies and trash companies to run on natural gas, methanol, electricity, or fuel cells. The regulations cover government agencies, universities and transit companies in Los Angeles, Orange, Riverside, and San Bernardino counties. In addition, public agencies will have to buy passenger cars with the lowest emissions available on the market. The rules apply to only newly purchased vehicles within the fleets. Over the next two years, the rules will affect 3,700 transit buses and 7,200 garbage trucks.

Later this summer, the air quality agency hopes to address school buses, which are currently not included in the plan. Other proposals include heavy-duty public vehicles, street sweepers, and taxis and shuttles that serve airports. Proponents of the first-of-its-kind plan believe that these requirements could ultimately affect 120,000 public and private vehicles in Southern California. Furthermore, they hope that the plan will lead to similar initiatives around the country.

Clean Cities Workshop Welcomes New Members

On August 29th, thirteen new stakeholders joined the Greater Houston Regional Clean Cities Coalition and pledged to encourage the use of alternative fuel vehicles in their fleets.

The Greater Houston Regional Clean Cities Coalition is a locally-based government/industry partnership, coordinated by the U.S. Department of Energy (DOE) and funded by H-GAC. It promotes the expansion of alternatives to gasoline and diesel fuel, including biodiesel, ethanol, methanol, hydrogen, natural gas (CNG/LNG), propane (LPG) solar fuel, and electricity in the eight-county nonattainment area.

The "Advancing the Choice" workshop not only welcomed new members, but educated attendees on alternative fuel vehicles through technology updates, information booths and vehicle demonstrations.

The 13 new stakeholders join approximately 30 other existing stakeholders. The new stakeholders include Advantage Motors, Alvin Independent School District, Automotive Technology Center, City of Pearland, City of Texas City, GasNet, Houston Advanced Research Center (HARC), Metropolitan Transit Authority of Harris County Texas (METRO), Humble Independent School District, International Clean Transportation Corridor-3, Port of Houston Authority, Spring Branch Honda, and Texas-New Mexico Power Company. For more information, please visit www.houston-cleancities.org.

Scientists Finish Texas Air Quality 2000 Study

InAugust and September, a national team of scientists undertook the most comprehensive air quality study ever done in the State of Texas. The research initiative, known as the Texas Air Quality Study 2000, collected detailed ozone, chemical, aerosol and meteorological measurements taken from aircraft and at numerous ground locations in the eastern half of the state. The goal of the study was to provide a better understanding of the basic chemical, meteorological and atmospheric transport processes that determine ozone and fine particle distributions, and to develop new scientific understanding that will assist policymakers in devising optimal ozone and PM management strategies.

The study's resources come from three sources: ground-based monitoring stations, research aircraft and meteorological monitoring. The ground-level monitoring stations are divided into three groups based on their sophistication, 55 stations in all. Six research aircrafts provided the greatest possible range of experimental capabilities, to include the collection of chemistry and meteorological measurements, regional emission, chemical and transport measurements, and thermal mapping and urban heat island effects. Finally, scientists used ten ground-based meteorological monitoring stations to collect meteorological data to help determine the significance of local and regional weather conditions.

During the last week of September, Dr. Peter Daum, one of the lead researchers on the study, presented some of the study's preliminary results. Dr. Daum noted the extremely high levels of ozone found in the Houston-Galveston-Brazoria region's air. He commented that compared to similar studies conducted in other major metropolitan areas throughout the United States, he had never seen ozone levels as great as those measured in our area.

Dr. Daum remarked that large differences existed between ozone levels in the east and west parts of the city. However, ozone travels quickly, and the research team found that it was not uncommon for a plume to travel from southeast of Houston to north of Conroe. Preliminary results also suggest that the formation of our area's ozone is from a combination of point source emissions, mainly from industry, and mobile and non-mobile source emissions, such as cars, trucks and construction equipment. The research team saw little evidence that the region's natural ecosystem contributes significantly to ozone.

The $20 million Texas Air Quality 2000 Study is part of the Southern Oxidant Study, an alliance of research scientists, engineers, universities, federal and state governments, industry, and public interest groups. Although final analysis of the Texas Air Quality 2000 Study are not yet available, see www.tnrcc.state.tx.us or call 512-239-1459 for more information.

Free Ride for College Students with Metro U.Pass

U.Pass is a new, free METRO bus pass, just for college and university students. It's free to get and free to use from August 28 to Novemeber 30, 2000. It's good anytime, anywhere, on just about any METRO bus service.

U.Pass is easy to use as well. Just show your Student ID, insert your U.Pass in the farebox, and you're on your way.

U.Pass promotes cleaner air by getting polluting vehicles off the road. Furthermore, the U.Pass frees you from traffic, parking and money hassles. If you are a college student, call METROline at 713-635-4000 or visit www.ridemetro.org to find out where you can get your U.Pass. Students enrolled at the following colleges, universities and technical schools are eligible for the U.Pass:

- Art Institute of Houston
- Baylor College of Medicine
- College of Biblical Studies
- Education America
- Houston Baptist University
- Houston Community College
- Houston Graduate School of Theology
- ITT Tech
- North Harris College
- Prairie View A&M College of Nursing
- Rice Univeristy
- San Jacinto College South
- South Texas College of Law
- Texas A&M Institute of Biosciences and Technology
- Texas Southern University
- Texas Women's University
- University of Houston
- University of St. Thomas
- University of Texas Health Science Center

The U.Pass program is supposrted through a Congestion Mitigation/Air Quality grant, which is funded by H-GAC, the Federal Highway Administration and the Texas Department of Transportation.

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Image courtesy of NASA

The infrared image of downtown Atlanta shows the urban heat island effect. NASA began taking similar to images of Houston this August.

NASA Studies Houston's Urban Heat Island Effect

During the last week of August, NASA began its flyovers in the region taking infrared pictures to study the urban heat island effect in Houston. An "urban heat island" is a term used by scientists to describe a city on a warm summer day where the air in the city can be 6-8°F hotter than surrounding areas. This phenomenon occurs when trees and vegetation are replaced with buildings, parking lots and roadways as a result of urban growth. As a result, fewer trees and shrubs cannot effectively cool the warm air through evapotranspiration. Instead, the sun's rays are absorbed into the dark material of the buildings and pavements, causing the temperature of the surfaces and the air around them to rise. In fact, black surfaces in the sun can become up to 70°F hotter than the most reflective white surfaces.

Urban heat islands are not only uncomfortably hot, they are also smoggier. Ground-level ozone in irritation or harmful concentrations is typically formed during periods of high solar radiation and elevated temperatures. For example, scientists at the Lawrence Berkeley National Laboratory have found that the probability of smog increases by five percent for every 0.5 degrees Fahrenheit rise in the daily maximum temperature above 70°F. Higher temperatures in the heat island also increases air conditioning energy use, further increasing both pollution levels and energy costs. It is estimated that in Los Angeles, the increased power used to compensate for the impact of the heat island effect costs Los Angeles rate-payers about $100 million per year.

Scientists will study these images to examine temperature differences across the landscape. Experience in large urban areas suggests that a combination of three long-term mitigation measures can reduce urban heat island effects by planting shade trees in strategic locations, replacing dark roofs with reflective, lighter roofs or planting roof gardens, and using lighter, more reflective surfaces for pavement.

Preliminary photos of the study can be seen at www.livablehouston.org.

In the images, the white areas, the roofs, are the hottest at 150°F; the red areas are at 140°F; the yellow areas, asphalt roads, are at 130°F, the light blue areas, concrete roads and buildings, are at 120°F; the green areas, the vegetation, are at 90-100°F. To learn more about heat islands, please visit http://eetd.lbl.gov/heatisland.

New 2000 Air Quality Reference Guide

The 2000 edition of the Air Quality Reference Guide for the Houston-Galveston Area is available. The guide provides accurate and up-to-date information about air pollution in the greater Houston area. The guide is prepared by a consensus group representing industry, public health, government, citizens and the environmental community. It is revised annually as new information becomes available and as our understanding of regional air issues improves.

The 2000 version addresses what we are doing to help clean the air and what we expect to do next in the State Implementation Plan for the Houston-Galveston Area. It also outlines new local clean air initiatives, including the Houston-Galveston-Brazoria Ozone Communication System, the Business Coalition for Clean Air, Commute Solutions, and the Texas 2000 Air Quality Study, to name a few.

The Reference Guide is free. Call 713-993-2458 for your copy or download at www.cleanairaction.org.

CLEAN AIR ACTION

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A program of the Houston-Galveston Area Council

Address Correction Requested

Every day is another opportunity to clean up the air.

Sydney Olympics See Gold, Silver, Bronze and Green

The 2000 Summer Olympic games, held in Syndey, Australia, from September 13 through October 1, have been hailed as the greenest games ever. Sydney was the first host city to ever include a comprehensive commitment to the environment through its "Environment Guidelines." The Guidelines contain over a 100 commitments in five key environmental areas: energy, water, waste, air, and the natural and cultural environment.

With over 500,000 visitors to Syndey, one of the most visible environmental issues for the games was transportation. Environmental impacts from transportation, such as air pollution, were diminished through the maximization of public transportation systems; the inclusion of 'park and rides' and the exclusion of parking for private cars at competition venues; the proximity of venues to reduce need for travel; the use of alternative fuels for dedicated fleets; and an integrated ticketing system that includes one ticket for events and transport.

Olympic officials also helped clear the air through such innovative measures as a "clean" Olympic torch. The environmental friendly design of the torch included such factors as fuel type, fuel efficiency, unused fuel recovery, and resuse of recycled materials in the torch.

The degree of attention that Syndey officials gave to the environment not only helped Sydney win the Olympic bid, but also helped establish a new environmental standard for which future Game organizers can build upon. Furthermore, Syndey's concern for the environment has not only increased community awareness, but hopefully, international awareness. To learn more about the green Olympics, visit: www.olympics.com/eng.

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