

HOUSTON'S AIR QUALITY: WHERE DO WE STAND TODAY?

Houston can breathe easy. Despite strong population and economic growth, Houston's air quality is good and continues to improve.

The Houston region had the largest increase in population of any U.S. metro area from 2010 to 2013, gaining 392,702 new residents and becoming the fifth most populous U.S. metro area in the nation. The region's economy has also grown. Since 2000, the region's gross domestic product grew at twice the rate of the rest of the nation. In addition, the Houston region boasts a diverse economy with a strong energy sector where 13.2% of the nation's crude oil is refined, and 40.6% of the nation's base petrochemicals are manufactured.

With more people, more traffic, economic development booming, and a strong manufacturing base, you'd think all that growth would perpetuate more air pollution. Fortunately, that's not the case!

- Houston's ozone levels are down 18% since 2000, while the rest of the nation's are down by an average of 12%.
- Houston meets five of the six national health-based air standards set by the U.S. Environmental Protection Agency. Many other areas still don't meet two, three or even four of these standards.
- Houston's fine particle levels continue to decrease and now meet EPA's new, stricter standard for this pollutant.
- With the support of the energy industry, Houston is the most densely monitored region in the nation for a variety of air pollutants, with an especially dense network near industrial communities.
- In 2000, Houston vied with Los Angeles for the area with the highest ozone levels. In 2012, Houston dropped to ninth in the nation.
- In 2013, Houston experienced the fewest number of ozone days ever recorded.

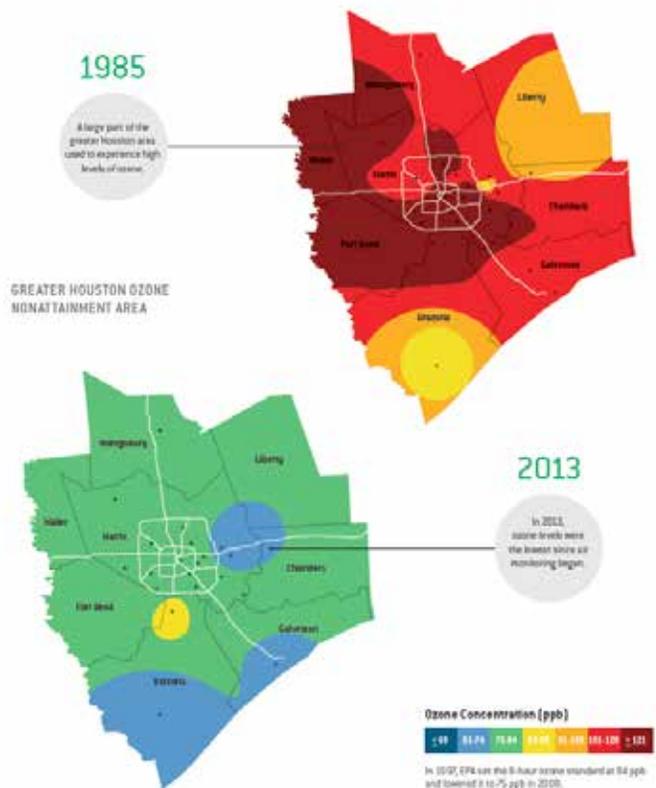
How did all these improvements occur despite our region's growth? It required a significant and sustained effort from businesses, industry, government, and residents.

Local governments adopted emission reduction plans that emphasized energy conservation and replacement of older, higher polluting fleet vehicles among other things.

- The Port of Houston Authority and local airports adopted a number of programs that have reduced their emissions.
- The Houston-Galveston Area Council made it easier

8-HOUR OZONE DESIGN VALUES

Based on TCEQ and City of Houston regulatory monitoring sites (labeled by - on the maps)



Images provided by Houston Regional Monitoring Corporation

for individual citizens to get involved through their Commute Solutions program.

- The federal government adopted new regulations that reduced emissions from cars and other engines, and adopted new cleaner-burning fuel regulations.
- The Texas Legislature adopted The Texas Emission Reduction Plan, which provides grants to owners of older engines to replace them with newer, cleaner burning engines. A similar program allows lower-income families to retire, replace, or repair old, high-emitting vehicles.

Houston businesses and industry have played a unique role in reducing emissions as well. For example, in 2005, the Texas Commission on Environmental Quality (TCEQ) started using infrared (IR) cameras in a pilot program to look for volatile organic compounds (one of ozone's chemical building blocks) leaking from industrial facilities, gas stations, pipelines and other sources. The IR cameras allow trained technicians to sweep the camera over large areas at one time, and they have become a powerful tool for both TCEQ inspectors and facility operators. When leaks are seen, they can be quickly fixed. Several industrial facilities immediately recognized the potential of this new technology to find and fix leaks quickly, which helps them stay in compliance with regulations, while at the same time

detecting potentially unsafe operating conditions at an early stage, and saving money through the reduction of product loss.

In addition, in the past, several neighborhoods in Houston experienced levels of air pollutants like benzene, styrene or butadiene that exceeded the TCEQ's benchmark levels. Working with business and industry, local government and residents, those levels have been reduced. This cooperative approach allows industrial facilities to work with the TCEQ to design the most effective approach to reducing emissions. The approach that is identified by this process becomes part of an enforceable agreement between the companies and the state, and air pollution monitors remain in place to make sure that the levels stay below the agreed-upon benchmark over the long term.

Finally, between 2009 and 2011, the TCEQ and University of Texas (UT) conducted an intensive study designed to examine how well flares work to destroy industrial waste gas. Industry representatives accompanied scientists to the testing facility to observe the results of the tests. The tests showed that by adjusting key operating parameters, the flare's ability to destroy emissions could be increased. Industrial facilities across the region began to adjust their flare operations to be more effective almost immediately.

What does the future hold? Reducing air pollution in the future will not be easy or cheap—many of the least expensive and most effective measures have already been put in place. To keep you informed about Houston's air quality successes, challenges, and what's on the horizon, the Greater Houston Partnership has developed a website called **On Air: Houston** at www.houstonairquality.com.

Bookmark it as your go-to reference for news and updates about Houston's air quality.

- Article provided
by On Air:Houston



Sustaining our Valuable Infrastructure: The Importance of Proactive Ingenuity



It is quite an accomplishment to garner a top position in the global market; it is yet another to sustain that position. Staying competitive requires forward-looking planning and proactive action rather than reactive.

Such is the case with the **Port of Houston Authority's** decision to deepen and widen the Barbour's Cut and Bayport container terminal channels. While the 52 mile-long federal ship channel is currently operating at a depth of 45 feet, the Barbour's Cut and Bayport channels had only been authorized to a depth of 40 feet. Current trends in the shipping industry have led to the construction of larger vessels. Once, 2,000 – 3,000 twenty-foot equivalent (TEU) ships were standard, now ports in the U.S. are seeing ships as large as 13,000 – 14,000 TEUs.

In order to remain competitive in the global marketplace, the Port Authority realized they would need to deepen and widen both Barbour's Cut and Bayport channels to match the rest of the ship channel, and to allow ships to dock within their maximum draft. Currently, many ships are unable to approach or depart the two container terminals with a full load. Once the deepening and widening is complete, Bayport and Barbour's Cut terminals will be able to accept ships 8,500 TEUs in size, fully laden.

While the anticipated completion of the Panama Canal locks expansion has been a driver for the project, it would still be necessary to dredge to 45 feet even without the Panama Canal. There

are already bigger ships from the Mediterranean and Europe that want to come to Houston.

Under normal circumstances, the U.S. government would be responsible for funding the deepening and widening of the two container terminals, however this funding process would have taken close to 15 years. The Port Authority could not wait that long. In order to remain competitive, the Port Authority commission approved self-funding the projects at an estimated cost of \$80 to \$100 million. The Army Corps of Engineers has, however, agreed to maintain the channels at their new depths once the project is complete.

Even as the Port Authority celebrates these projects, to be completed in the second quarter of 2015, they are looking still further into the future, it is already clear that dredging to 50 feet is in the cards another decade or more down the road.

After all, Texas has garnered the title of top exporting state for the past 12 consecutive years, and the Port of Houston played no small part in this accomplishment. In 2013, the Port of Houston accounted for 46% of the Texas market share by tonnage and 95% of market share in containers by total TEUs. Only by continuing to maintain current infrastructure, while planning decades into the future, will the region continue to enjoy this top position.

