

## **H72 AB PROJECT OVERVIEW**

This document contains the results of several studies conducted under the Houston Advanced Research Center (HARC) H72 AB project. All of these studies were conducted to assist the Texas Commission on Environmental Quality (TCEQ) in the preparation of State Implementation Plans (SIPs) for attainment of the 8-hour ozone standard in the Houston-Galveston-Brazoria (HGB) and Dallas Fort-Worth (DFW) ozone nonattainment areas. The three studies included in this volume are as follows:

### **Texas Emission Reduction Plan (TERP) Program Analysis**

The 77th Texas Legislature established the TERP in 2001 through enactment of Senate Bill (SB) 5. The TERP includes a number of voluntary financial incentive programs, as well as other assistance programs, to help improve Texas air quality. The primary purpose of the TERP program is to reduce NO<sub>x</sub> emissions through voluntary incentive programs, mainly from heavy-duty on-road and non-road vehicles and equipment in the HGB and DFW ozone nonattainment areas. The TERP is funded through revenues deposited in the Emission Reduction Plan Fund, which consists of fees and surcharges established by the SB5. Since then, the guidelines of the TERP have been amended in 2003 by HB 1365 and in 2005 by HB 2481 and HB 3469.

The purpose of this study was to project potential on-road and non-road NO<sub>x</sub> emission reductions for the TERP for the years 2007, 2009 and 2012 in the HGB and DFW areas, and to update ENVIRON's previous TERP analysis to incorporate the projects funded by TERP in fiscal years 2005 and 2006. This study is an update and extension to the preceding HARC H42 study (ENVIRON 2005), which assessed the TERP and quantified the types and numbers of actions that would be necessary to achieve the required levels of NO<sub>x</sub> reductions from the TERP in the HGB and DFW areas in 2007, and also projected potential on-road and non-road NO<sub>x</sub> emissions reductions for the TERP in 2010.

### **Low Income Repair Assistance Program (LIRAP) Evaluation and Improvement**

The AirCheckTexas vehicle inspection and maintenance (I/M) program introduced in the DFW and HGB areas in 2002 included a new annual tailpipe test, Acceleration Simulation Mode (ASM), for model year 1995 and older vehicles and, for 1996 and newer model years, the vehicle's on-board diagnostic (OBD) equipment would be checked each year instead of subjecting the vehicles to a tailpipe test. As both the ASM and OBD tests are more stringent than the previously utilized two-speed idle test (TSI), the new program was designed to achieve higher levels of reductions of the emissions measured by the TSI test, and, in addition, to achieve reductions in emissions of Oxides of Nitrogen (NO<sub>x</sub>).

Most observers expected both the failure rate for the ASM test and the costs of repairing vehicles that fail to meet the more stringent emissions standards to be considerably higher compared to the TSI test, placing an especially difficult financial burden on low-income owners of failing vehicles. The LIRAP provides limited relief for low-income vehicle owners in the repair of vehicles failing the I&M test, and/or purchase assistance for qualified replacement vehicles. LIRAP applies in counties that implement a vehicle inspection and maintenance (I/M) program and have elected to implement LIRAP provisions.

The objectives of this study were to evaluate the LIRAP in the HGB and DFW emissions testing program in terms of emission reductions and cost effectiveness, and to suggest possible improvements to LIRAP; and to consider the comparative effectiveness of several alternative emission reduction strategies that could be implemented in addition to LIRAP with the excess funds that are generated through the collection of the LIRAP fee from each emissions test on model year 1996 and newer vehicles.

### **Sensitivity of HGB and DFW Ozone Levels to Expected Reductions in Mobile Source Emissions Between 2009 and 2012**

Future year modeling of ozone levels in 2009 to evaluate their responsiveness to emission reduction strategies suggests that both HGB and DFW will have difficulty attaining the 8-hour ozone standard by 2009. This difficulty results, in part, from the significant contribution of mobile sources to both HGB and DFW ozone combined with the limited options available to the TCEQ for controlling mobile source emissions, which are primarily controlled with Federal standards. Texas can use incentive programs such as the Texas Emission Reduction Program (TERP) to accelerate mobile source emission reductions, and the first study of the H72 project evaluated the emissions benefits of extending TERP through 2012. This portion of the H72 project evaluates the sensitivity of HGB and DFW ozone to the expected reductions in mobile source emissions between 2009 and 2012 that will result from EPA's national programs.