

REVISIONS TO THE STATE IMPLEMENTATION PLAN (SIP)  
FOR THE CONTROL OF OZONE AIR POLLUTION

VEHICLE MILES TRAVELED OFFSET SIP FOR  
FOR THE HOUSTON/GALVESTON NONATTAINMENT AREA

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION  
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## B. OZONE CONTROL STRATEGY

1. - 7. (No change.)

### 8. MOBILE SOURCE (Revised)

a. Vehicle Inspection/Maintenance Program

b. Vehicle Miles Traveled Offset

#### 1) General

The Federal Clean Air Act (FCAA) Amendments of 1990, under §182(d)(1)(A), required states to submit by November 15, 1992, State Implementation Plan (SIP) revisions for severe or worse ozone nonattainment areas that include specific enforceable transportation control measures (TCMs) from the FCAA, §108(f) as necessary to offset increases in motor vehicle emissions resulting from growth in vehicle miles traveled (VMT) or numbers of vehicle trips. This SIP revision will also satisfy reductions in motor vehicle emissions consistent with the 15% Rate-of-Progress SIP and the Post-1996 Rate-of-Progress SIP.

However, as stated in the General Preamble for Implementation of Title I (Appendix A), the United States Environmental Protection Agency (EPA) acknowledged that the November 15, 1992, deadline did not provide states adequate time to develop effective long-term TCMs and allowed states to submit a committal VMT Offset SIP revision by that date.

Therefore, the Texas Natural Resource Conservation Commission (commission) submitted to EPA a committal SIP revision for the Houston/Galveston ozone nonattainment area on November 13, 1992, which required the development and submittal of subsequent SIP revisions in 1993 and 1994 to provide necessary, enforceable TCMs. These revisions are outlined below:

a) The 1992 committal SIP was followed by the 1993 VMT Offset SIP revision, which paralleled the development of the 15% Rate-of-Progress SIP revision, submitted to EPA on November 12, 1993. The 1993 VMT Offset SIP revision included the following information:

(1) a projection of the mobile source emissions profile for the Houston/ Galveston nonattainment area through 2007, including the effects of required reductions from the Vehicle Inspection/Maintenance (I/M) Program, Reid Vapor Pressure (RVP) controls, reformulated gasoline, Employer Trip Reduction (ETR) Program, Stage II Vapor Recovery for refueling, and Clean Fuel Fleet Program;

(2) an estimation of the lowest point in these emissions projections, after which growth in VMT results in higher emissions despite improvements in cleaner vehicles and fuels, representing the required mobile source emissions ceiling; and

(3) a set of TCMs and other mobile source controls which further reduced emissions below this ceiling.

b) The 1994 VMT Offset SIP revision which was submitted to EPA on November 6, 1994, was prepared to update the 1993 VMT Offset SIP in order to satisfy the requirements of the FCAA, §182(d)(1)(A). The 1994 VMT Offset SIP revision included a modification of the mobile source emissions

projection and the established ceiling level to reflect updated information and methodologies. It also established that, from previous assumptions, no additional TCMs were required to offset increases in emission from VMT or numbers of vehicle trips.

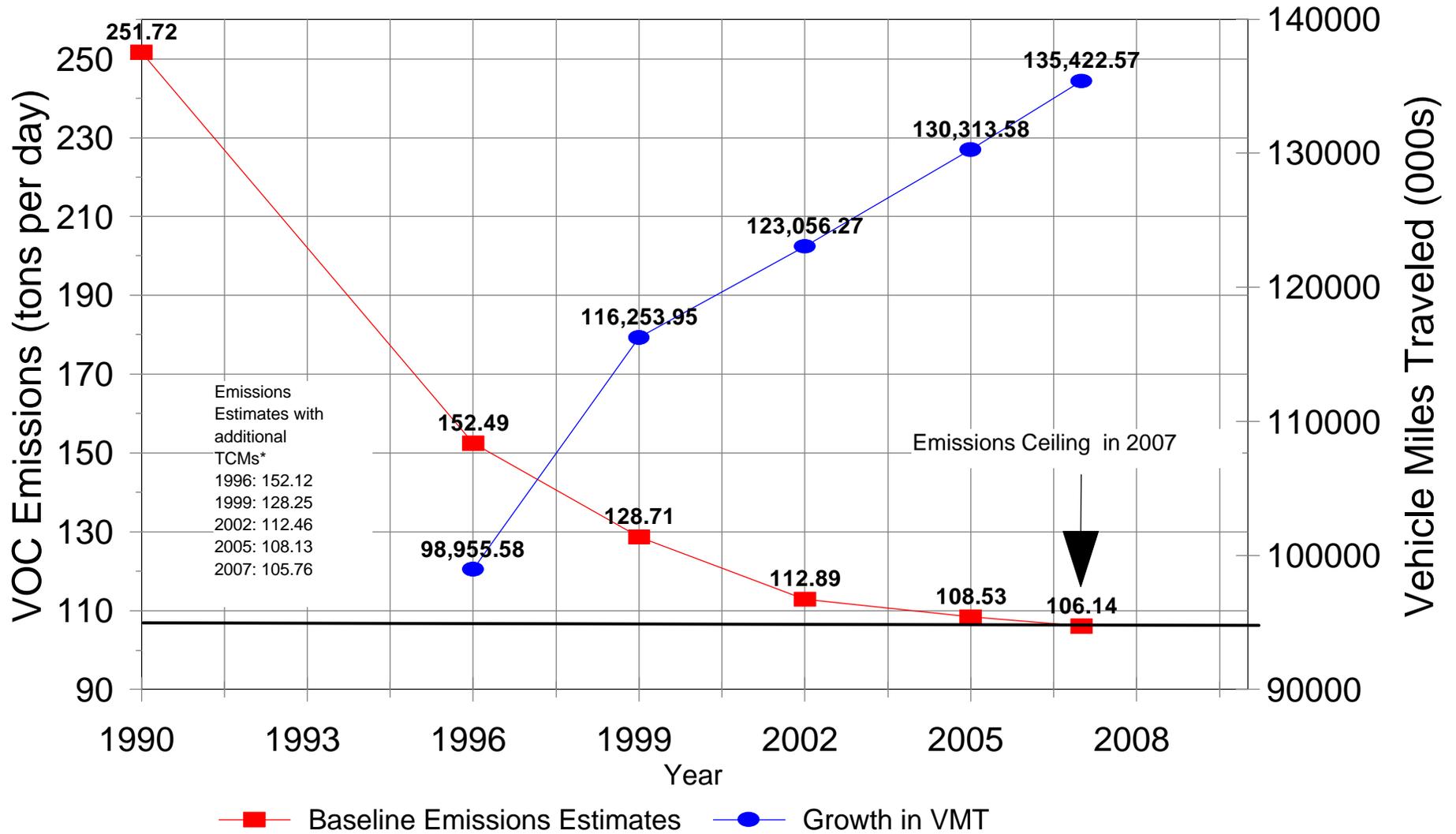
c) Since the 1994 VMT Offset SIP was submitted to EPA, the vehicle I/M and ETR programs have changed. Therefore, the 1997 VMT Offset SIP revision is needed to satisfy the requirements of the FCAA, §182(d)(1)(A). This revision demonstrates the offsetting of emissions increases due to growth in VMT and vehicle trips by showing the downward trend of the mobile source baseline emission estimates and by including emissions reductions from additional transportation control measures (see Chart 1 "Houston-Galveston Mobile Source VOC Emissions Estimates "). This SIP revision also identifies the mandated and additional transportation control measures generating reductions in mobile source emissions.

## 2) Calculation of Mobile Source Baseline Emissions Estimates and Ceiling

The mobile source baseline emissions estimates for the Houston-Galveston Ozone Nonattainment Area covers 1990 through 2007 (see Chart 1 "Baseline Emissions Estimates" curve). HGAC prepared an analysis and projection of mobile source emissions of VOC from 1990 to 2007, including the effects of all federally mandated programs (Appendix B). These estimates include the net effect of increases and decreases in emissions from growth in VMT and the implementation of mandated control programs such as Federal Motor Vehicle Control Program (FMVCP) for new vehicles, low-Reid Vapor Pressure fuel, reformulated gasoline, and vehicle emissions testing. As long as the curve does not turn upward (indicating the control programs are offsetting increases in emissions from growth in VMT), new transportation control measures are not necessary. The lowest point of this baseline curve, 106.14 tons/day VOC, does not occur until the year 2007. This defines the horizontal ceiling line which future mobile source emissions in the area may not exceed.

Though demonstration indicates that additional TCMs are not necessary, HGAC supports the inclusion of a number of TCMS into the SIP. The effect on emissions is summarized in Chart 1 (see inset table: "Emissions Estimates with additional TCMs").

### Chart 1: Houston-Galveston Mobile Source VOC Emissions Estimates



\* Due to the small differences in emissions, a curve depicting emissions reductions with TCMs has not been included.

### 3) VMT Offset Strategies

#### a) Federal Clean Air Act Mandated Mobile Source Control Programs

The following is a list of the mobile source control programs identified as producing the emissions reductions to offset emissions increases due to growth in VMT:

- The Federal Motor Vehicle Control Program (FMVCP) for new vehicles, including the Tier I standards.
- A fuel volatility, or Phase II RVP, of 7.8 pounds per square inch (psi). This control was replaced by the Reformulated Gasoline program.
- Reformulated Gasoline Program, which started in January 1995.
- Vehicle Emissions Testing. Low-Enhanced Performance Standard (LEPS) I/M Program, which is applicable to the urbanized area as defined by the 1980 census. This covers Harris County and portions of surrounding counties that include an additional 83,000 residents.

The FCAA Amendments of 1990, §182(c)(3) originally required an Enhanced I/M program to be implemented throughout the consolidated metropolitan statistical area consisting of Harris, Galveston, Brazoria, Fort Bend, and Montgomery Counties by 1995 and Waller, Chambers, and Liberty Counties by 1997. In September 1995, EPA adopted the I/M Flexibility Rule which allows states to use the low-enhanced performance standard to meet their enhanced vehicle I/M requirements. Therefore, the vehicle I/M program in Texas was redesigned. Although the program was redesigned, it continues to achieve the emissions reductions to help keep the total motor vehicle emissions below the ceiling until the year 2007 (see graph page 5: VOC Emissions Estimates).

#### b) TCMs

The Transportation Policy Council for the Houston/Galveston Transportation Management Area adopted, through resolution on September 29, 1995, TCM commitments in the 1996-1998 Transportation Improvement Project (TIP) and 2020 Metropolitan Transportation Plan (MTP) (see Appendix C). These TCMs have been included in the commission’s revisions to the 15% Rate-of-Progress and Post-1996 Rate-of-Progress SIPs, which were submitted to EPA on July 24, 1996, and have been included in the VMT Offset SIP as measurable emission reduction credits. These measures are described in “Table 1: HGAC Transportation Control Measures”.

Table 1: HGAC Transportation Control Measures		
TCM	Quantity	Emissions Benefit in 1996
High Occupancy Vehicle Lanes	14.7 miles	approximately 424 pounds of VOC per day
Park-and-Ride Lots	3,745 parking spaces	approximately 69 pounds of VOC per day
Arterial Traffic Management Systems	41 miles	approximately 77 pounds of VOC per day
Computer Transportation Management Systems	22.2 miles	approximately 169 pounds of VOC per day
Signalization	2.9 miles	approximately 3 pounds of VOC per day

#### 4) TCM Enforceability and Funding

a) The 1990 FCAA Amendments require states to ensure that all TCMs included in the SIP are enforceable by rule. 30 Texas Administrative Code, Chapter 114, §114.23 regarding TCMs (Appendix D), has been adopted by the commission to require Metropolitan Planning Organizations (MPOs),

including the HGAC, to submit specific TCM commitments and to ensure adequate funding, implementation, and emissions reductions through the TIP and MTP process. The MPOs have an opportunity to revise the TIP and MTP to provide additional TCMs as necessary to achieve full anticipated emission reductions.

b) Transportation projects with demonstrated air quality benefits are to receive priority allocation of funds regardless of funding source. Therefore, TCMs included in the SIP must receive maximum priority for approval, funding, and timely implementation.

9. - 11. (No change.)

## APPENDIX A

Excerpt from the General Preamble for implementation of Title I of the Clean Air Act of 1990, pages 124 to 132. April 16, 1992, 57FR13498.

## APPENDIX B

“Revised On-Road Mobile Source Emissions Inventory Estimates in Support of the Vehicle Miles of Travel State Implementation Plan for the Houston/Galveston Ozone Nonattainment Area.”

Revised: June 1997, by the Houston/Galveston Area Council.

## APPENDIX C

Resolution approving the selection of projects for the 1996-1998 Transportation Improvement Program and the Metropolitan Transportation Plan. Transportation Policy Council for the Houston/Galveston Transportation Management area, September 29, 1995.

## APPENDIX D

30 TAC Chapter 114, §114.23, Transportation Control Measures, revised on July 27, 1994, effective August 26, 1994.