REVISION TO THE STATE IMPLEMENTATION PLAN

VEHICLE MILES TRAVELED OFFSET

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
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State Implementation Plan Revisions

Vehicle Miles Traveled Offset

The Texas Natural Resource Conservation Commission (TNRCC), a new agency combining the Texas Air Control Board and the Texas Water Commission, proposed a revision to the State Implementation Plan (SIP) concerning specific enforceable Transportation Control Measures (TCM) to offset increases in emissions resulting from growth in vehicle miles traveled (VMT) or number of vehicle trips in the Houston/Galveston ozone nonattainment area. This SIP revision is required by the 1990 Federal Clean Air Act (FCAA) Amendments for severe or worse nonattainment areas. The Houston/ Galveston nonattainment area is rated severe with regard to ozone pollution.

A committal SIP revision was submitted to the U.S. Environmental Protection Agency (EPA) on November 15, 1992. The TNRCC committed to provide supplemental SIP revisions on November 15, 1993, with additional TCMs to be adopted and submitted to EPA by November 15, 1994 as necessary to ensure that the VMT offset is achieved through 2010.

A public hearing was held in Houston, Texas, on September 20, 1993 to receive testimony regarding the proposed revisions concerning the VMT offset SIP revision. Written testimony was received from two commenters during the comment period, including

the Houston-Galveston Area Council (H-GAC) and the Galveston-Houston Association for Smog Prevention (GHASP).

The GHASP commenter stated that a committal SIP is illegal and questioned what TNRCC is going to do to legally meet the deadline.

The EPA has accepted committal SIP revisions as legally binding documents. Although the FCAA did establish a November 15, 1992 deadline for submittal of a VMT Offset SIP revision, subsequent guidance indicated that a committal SIP was sufficient to allow states to develop and implement a comprehensive strategy of effective TCMs over a two-year period concurrent with the preparation of the Rate-of-Progress (1993) and demonstration of attainment (1994) SIP revisions. However, this committal process in no way extended the date by which TCMs must be implemented or VMT offset achieved. Therefore, the proposed SIP revisions are considered sufficient to satisfy all legal requirements.

The GHASP mentioned that, although it is important to stay below an established ceiling, it is also important to maintain attainment of the National Ambient Air Quality Standards (NAAQS). The individual asked how the TNRCC will maintain attainment of the NAAQS, if they should attain it by 2007.

The TNRCC staff agrees that attainment is the ultimate goal of these strategies and the VMT offset requirement is a step towards attainment. If emissions are not allowed to increase despite an increase in VMT, the chances of achieving and maintaining attainment should be improved. Attainment will be maintained through improvements in vehicle technology, TCMs, and other transportation improvements, as well as other stationary and area source controls.

The GHASP cited recent reports showing a lack of effectiveness of high occupancy vehicles (HOV) lanes in reducing emissions from motor vehicles. They cited "Inside EPA's Clean Air Report" of August 26, 1993 which reported that transportation trends show increasing VMT, while shared rides in transit are decreasing. The report also mentions that land use density and travel costs have decreased while densities increase reliance on the automobile.

Although some literature may suggest difficulties with ensuring the effective use of HOV lanes, the TNRCC staff believes that they can be effective when properly utilized and carefully sited. There has been a reduction in the number of vanpools in Houston, but the TNRCC staff expects the number of shared rides to increase with implementation of the Employer Trip Reduction (ETR) program for all employers with 100 or more employees.

Decrease in land use density is a long-range problem best handled through the long-range planning process and by careful planning of the location of transportation facilities, housing, and commercial and industrial facilities. The price of fuel and fuel taxes also are likely to increase in the future.

The GHASP commented that the use of park and ride lots in Houston has decreased recently and that bus ridership and the number of vanpools in Houston is decreasing.

As more park and ride lots are built, their utilization may temporarily decrease, but with implementation of the ETR program and other TCMs designed to curtail travel demand, their utilization should increase again. Carpooling, vanpooling, and bus ridership should also increase due to greater public education and awareness.

The GHASP criticized the Intelligent Vehicle Highway System (IVHS) program, stating that it utilizes technology with no track record.

While IVHS is a largely experimental program, it may prove of great value in the long run in terms of both safety and air quality. The IVHS measures currently used include on-board automobile information systems and automated message board signs, which serve to decrease emissions by warning of congestion or

accidents in time to avoid or minimize the delay. The greatest benefit will be achieved in the future when a compact stream of vehicles is fully automated to move along a roadway without driver control. This can increase linear capacity, reduce accidents, prevent speeding, and lower emissions.

The GHASP encouraged the use of TCMs, such as: land use densification, mixed land use development, pedestrian improvements, traffic signal timing improvements, telecommuting, and bicycle improvements.

All of the suggested TCMs are actively being considered by the H-GAC, and many short-range measures are being implemented as part of the Transportation Improvement Program (TIP). Land use is considered in long-range planning.

The GHASP criticized the listing of "highway capacity increases" as a TCM in a 1993 draft report for H-GAC on TCMs by Sierra Research Consultants and Sierra Research because these increase emissions.

The TNRCC agrees that an increase in highway capacity may lead to an increase in VMT and emissions. However, there are some situations where it serves to decrease congestion enough to reduce emissions. Examples of this are improvement of an entry to a

bridge or tunnel or adding a turn lane to a congested intersection.

The GHASP asked how H-GAC can guarantee commitments by the various agencies to do certain things such as implement TCMs.

A SIP revision is currently being considered for adoption by the TNRCC which lays out a process for enforcement and specific penalties for failure to implement TCMs, including withholding of funds and fines in the event of egregious failure. The H-GAC has the responsibility and authority to provide adequate funding to various implementing agencies through the inclusion of specific projects in the TIP. A failure to implement TCM commitments can result in withholding of funds by the H-GAC or by the federal government. Furthermore, the H-GAC can modify subsequent TIPs to compensate for shortfalls in TCM implementation.

The GHASP commented that new freeways are being proposed and built in the Houston/Galveston area.

Although some new roadways continue to be built to reduce congestion, a close look is being given to regionally significant roadways to see that they do not compound air quality problems. In addition, some funding is set aside for congestion management and air quality projects specifically designed to improve air quality. The TIP and long-range plan will be reviewed by the

TNRCC and EPA to make sure that the roadways being built or xpanded are of real benefit to the overall air quality of the area. The Intermodal Surface Transportation Efficiency Act (ISTEA) and the FCAA are mutually supportive in terms of placing a high priority on improvement of air quality when transportation projects are built in nonattainment areas.

The H-GAC supported the development of a SIP that fully achieves the region's required VMT offset emissions reduction with an emphasis on demand reduction.

The H-GAC supports the use of commitments to categories of TCMs rather than project-specific commitments because of the flexibility it provides to implementing agencies in fully meeting heir commitments. Flexibility is conducive to commitment because implementing agencies may substitute projects within a category for projects that failed to be implemented or used by the public for reasons not predicted in plans, commitments, or construction schedules.

The H-GAC supports the use of one aggregate emission target for the VMT Offset SIP, rather than project-specific or category-specific targets, because the aggregate target more fully reflects the interactions, both reinforcing and opposing, of various categories of TCMs.

The H-GAC also supports the stipulation that financial penalties will not be used, except in cases of egregious failure to comply with commitments, because threats of fines on Metropolitan Planning Organizations (MPO) and implementing agencies are substantial disincentives for commitments by implementing agencies.

The H-GAC urges the TNRCC to direct staff to work with implementing agencies and MPOs to develop transparent, mutually acceptable, and credible monitoring and enforcement procedures for TCM commitments.

The TNRCC staff agrees with the written H-GAC position on these recommendations and commits to continued coordination with regard to TCM implementation and tracking.

The Transportation Policy Council (TPC), the MPO policy-making body for the Gulf Coast State Planning Region, passed a resolution stating that it shall support expeditious implementation of TCMs as required in the ISTEA through federal funding assistance. They will also support the implementation of alternative TCMs as needed to achieve emission reduction targets. Should a TCM fail to be implemented within the schedule, which is attached to the resolution, the TPC will enforce commitments by withholding federal funding approvals from implementing agencies which fail to make a good faith effort to achieve their commitments.

The TNRCC staff accepts the resolution and is incorporating it into the SIP revision as the formal TCM commitment.

In October 1993, the H-GAC submitted to the TNRCC a revised "VMT Offset Emission Estimation Procedure for the Houston/Galveston Ozone Nonattainment Area." This document included a revised projected profile of mobile source emissions between 1990 and 2010. This updated curve is being substituted for the one presently in the SIP revision in order to reflect the most current information available.

Vehicle Miles Traveled Offset

Houston/Galveston Nonattainment Area

8. Mobile Source

a. Vehicle Inspection/Maintenance Program

b. Vehicle Miles Traveled Offset

1) General

The Federal Clean Air Act (FCAA) Amendments of 1990 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) to offset increases in emissions resulting from growth in vehicle miles traveled (VMT) or number of vehicle trips. However, as stated in the General Preamble, Title 1, dated March 27, 1992 (Appendix A), the U.S. 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 committal VMT Offset SIP revisions.

Therefore, the Texas Natural Resource Conservation Commission (TNRCC) submitted a committal SIP revision for the Houston/

Galveston nonattainment area on November 10, 1992, which required the development and submittal of subsequent SIP revisions in 1993 and 1994 to provide necessary enforceable TCMs. This phased submittal of information will parallel the development of the Rate-of-Progress SIP revisions due by November 1993, and the demonstrations of attainment SIP revisions due by November 1994. Information provided in each phase includes the following:

a) In the November 15, 1993 VMT Offset SIP Revision:

(1) a projection of the mobile source emissions profile for the Houston/Galveston nonattainment area through 2010, including the effects of required reductions from the mandatory Vehicle Inspection/Maintenance (I/M) program, Reid vapor pressure controls, reformulated gasoline, Employee Trip Reduction Program, Stage II Vapor Recovery for refueling, and Clean Fuel Fleet Program;

(2) an estimation of the lowest point in these emission 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 or other mobile source controls which demonstrate an initial effort to further reduce emissions below this ceiling.

b) November 15, 1994 VMT Offset SIP Revision will include:

(1) modification of the mobile source emissions projection and ceiling level to reflect updated information and methodologies; and

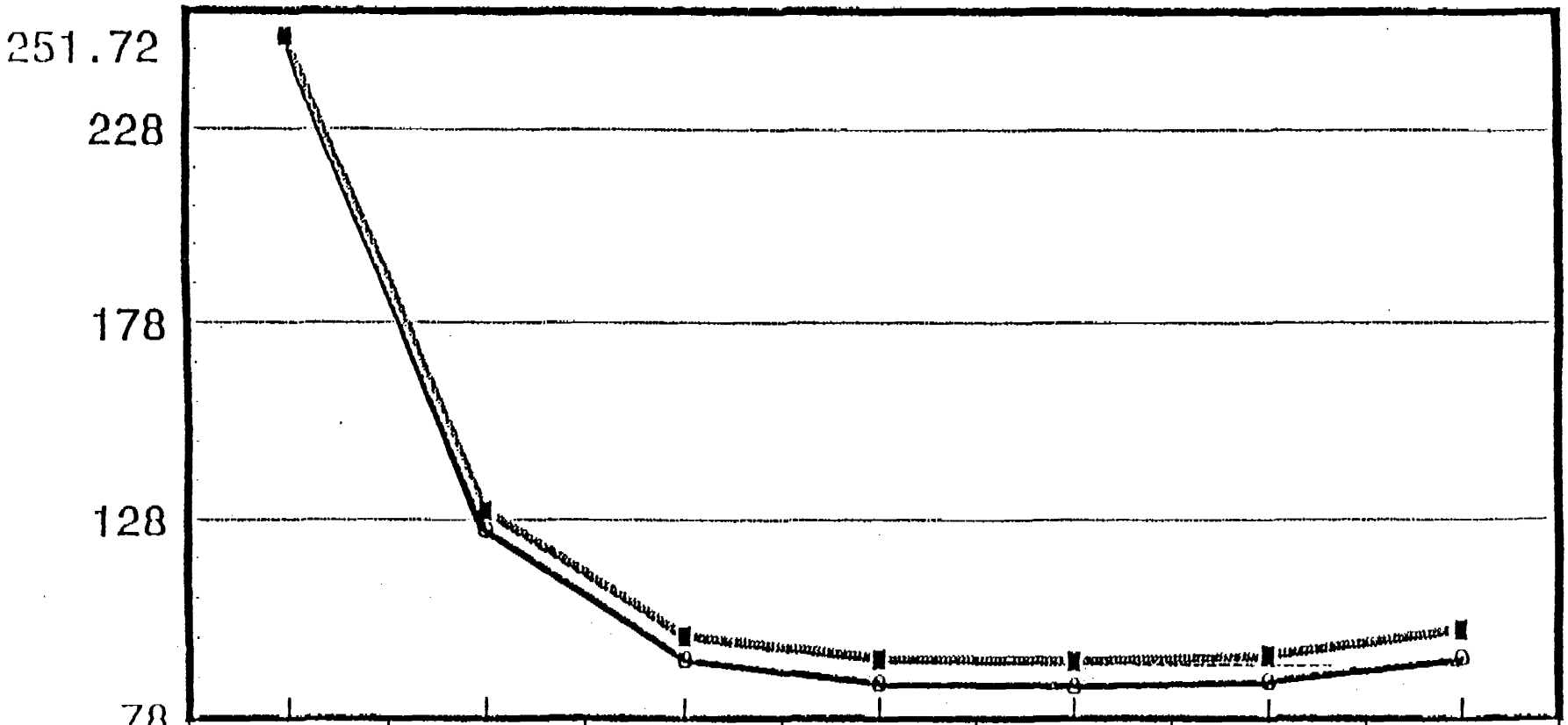
(2) additional TCMs and other mobile source controls necessary to achieve VMT offset at least through 2010.

2) Calculation of Mobile Source Emissions Ceiling

The Houston-Galveston Area Council (H-GAC) has prepared a projection of mobile source emissions of volatile organic compounds (VOC) from 1990 to 2010 (Figure 1), including the effects of all federally mandated programs. The lowest point in this curve occurs in about 2003 at approximately 83 tons of VOC per day. This defines the horizontal ceiling line which future mobile source emissions in the area may not exceed. Additional TCMs will be applied to maintain the expanded I/M curve below the ceiling line.

Emissions Estimation for VMT Offset SIP

VOC (tons/day)



	1990	1996	2000	2003	2005	2007	2010
Mandated	251.72	130.33	98.47	92.9	92.38	93.89	100.18
Expanded	251.72	125.23	92.74	86.77	86.07	87.27	93.06

II-GAC, October 1993

Figure 1

3) VMT Offset Strategies

a) Vehicle I/M Program

An enhanced vehicle I/M program is required in the Houston/ Galveston nonattainment area in accordance with the 1990 FCAA Amendments. The I/M program will be implemented throughout the consolidated metropolitan statistical area (CMSA) consisting of Harris, Galveston, Brazoria, Fort Bend, and Montgomery Counties by 1995 and Waller, Chambers, and Liberty Counties by 1997. This aggressive I/M program is predicted to maintain emissions below the ceiling until 2007 (See Figure 1).

b) TCMs Approved by 1993

The H-GAC and the Transportation Planning Committee (TPC) for Multimodal Planning for the Gulf Coast State Planning Region have implemented various TCMs since 1990 and have included additional measures in the Transportation Improvement Program (TIP) for 1993. Emission reductions for these measures have not yet been fully quantified, but will provide additional reductions below the ceiling. These TCMs include the following:

(1) High-Occupancy Vehicle Lanes,

(2) Arterial Traffic Flow Improvements,

(3) Park-and-Ride Lots,

(4) Transit Improvements,

(5) Area-Wide Rideshare, and

(6) Intelligent Vehicle Highway Systems.

c) TCMS Considered for 1994

The H-GAC and the TPC are currently evaluating additional TCMs that may be included in the TIP and long-range transportation plan to result in continuing reduction in areawide emissions. The effects of these measures on continual compliance with the VMT offset requirement will be considered and appropriate measures incorporated, as necessary, in SIP revisions to be submitted by November 15, 1994. These TCMs include, but are not limited to, the following:

(1) Land-Use Densification,

(2) Mixed Land-Use Development,

(3) Pedestrian Improvements,

(4) Traffic Signal Timing Improvements,

(5) College and School Traffic Management,

(6) Employee Transit Pass Subsidy,

(7) Non-Metro Service Area Transit,

(8) Fixed Commuter Rail,

(9) Bicycle Improvements,

(10) Trip Reduction Ordinances,

(11) Rideshare Programs,

(12) Parking Management,

(13) Telecommuting,

(14) Flexible Work Hours,

(15) Compressed Work Weeks,

(16) Gasoline Tax,

(17) Emission Pricing,

(18) Roadway Pricing,

(19) Motorist Information Systems,

(20) Incident Management and Response,

(21) Special Events Management, and

(22) Control of Truck Movements.

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. The TNRCC 30 TAC Chapter 114 Regulation IV, Control of Air Pollution From Motor Vehicles (Appendix B), has been revised to require metropolitan planning organizations (MPOs), including the H-GAC, to submit specific TCM commitments and ensure adequate funding through the TIP process. The MPOs would have an opportunity to revise the TIP 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 federal Congestion Management Air Quality (CMAQ) funding under the Intermodal Surface Transportation Efficiency Act (ISTEA) enacted

by Congress in 1991. Therefore, funding of TCMs included in the SIP must be funded before other projects considered in the TIP. Failure to dedicate necessary funding of SIP projects may result in the loss of all federal highway funding.