

## Response to Comments

### Voluntary Mobile Emission Reduction Program(VMEP)

The U.S. Environmental Protection Agency (EPA) commented that it appreciates the clarification of the VMEP statement, but suggested revisions to further clarify the commitment. EPA observed that in order to remedy any shortfall there is a subsumed responsibility to monitor and assess in order to meet such a commitment. The agency would like to see these steps specifically mentioned as well as the attainment date. EPA also commented that the language should be changed to clarify that chosen control measures are at the state's discretion not to remedy the shortfall. EPA included suggested language to address their comments.

**The commission shares the view that monitoring and assessment are important components to the VMEP program and agrees with the suggested language clarifications. Therefore, the adopted language reflects these suggestions.**

### Speed Limit Reduction

EPA has preliminarily concluded that the commission's proposal to suspend the 55 mph speed reduction in the Houston-Galveston nonattainment area (HGA) until May 1, 2005 could be justified providing the Texas Commission on Environmental Quality (TCEQ) supplies documentation to justify it and conducts a full review. EPA based its preliminary conclusion on information from TCEQ staff about analysis using the MOBILE6 emissions factor model. EPA said this MOBILE6 information raises a question whether a speed limit reduction for light duty vehicles is a reasonably available control measure (RACM). EPA agreed with the commission's conclusion that a delay until 2005 would result in the same amount of emission reductions by the attainment date and, therefore, the attainment plan remains unaffected.

**The commission appreciates the EPA's preliminary conclusion that delaying implementation of a speed limit reduction measure could be justified so that a full analysis can be conducted using the MOBILE6 emission factor model released by EPA January 2002. As documentation to justify the EPA's conclusion, the commission supplied EPA a March 2002 Technical Note prepared for TCEQ under contract by the Texas Transportation Institute (TTI) at the Texas A&M University System. The Technical Note is posted on the TCEQ's external ftp Internet site at:**

**[ftp://ftp.tnrcc.state.tx.us/pub/AirQuality/AirQualityPlanningAssessment/Modeling/HGAQSE/Contract\\_Reports/EI/Mobile6\\_EI\\_HG\\_2007.pdf](ftp://ftp.tnrcc.state.tx.us/pub/AirQuality/AirQualityPlanningAssessment/Modeling/HGAQSE/Contract_Reports/EI/Mobile6_EI_HG_2007.pdf)**

**The Technical Note documents the methods TTI used to develop the HGA August 2007 on-road mobile source emissions estimates using MOBILE6. Emission forecasts were based on August 2000 ozone meteorological conditions. The speed limit analysis compares emissions estimates before and after speed limits were reduced to 55 mph. Emission estimates were calculated at the roadway network link-level for each hour of each analysis day. The MOBILE6 analysis predicts a 5.90 tpd reduction in NO<sub>x</sub> from reducing speeds to 55 mph. MOBILE5, the model used to develop the current HGA SIP, predicted a 12.33 tpd reduction in NO<sub>x</sub>.**

**In addition, the commission supplied EPA a letter from TxDOT, which indicates a 2.3 tpd reduction in NO<sub>x</sub> if speeds are reduced 5 mph from the speeds posted before May 1, 2002.**

**TCEQ staff is conducting a complete emissions analysis for the HGA SIP midcourse review using information gathered during the recent Texas 2000 air quality study on ozone formation and the recently released MOBILE6 emission factor model. The state will submit the midcourse correction**

**SIP to EPA no later than May 1, 2004.**

The EPA asked the commission to cite additional reasons that support its revision of the speed limit measure.

**The commission appreciates the opportunity to clarify the basis for its final proposal to reduce original speed limits for all vehicles by 5 mph and to delay implementation of the 55 mph speed limit strategy until May 1, 2005.**

The commission based its final proposal on the preliminary analysis conducted by TTI using the recently released MOBILE6 emission factor model and the Texas 2000 air quality study on the complex formation of ozone in HGA. A complete compilation of the technical support documentation for the TCEQ's continuing improvement of the science is available to the public on the TCEQ external Web site at the following link under the heading, Other Documents:  
<http://www.tceq.state.tx.us/oprd/sips/june2002hga.html>

**Furthermore, the commission based its revised speed limit strategy on the strong safety concerns expressed by the Texas Motor Transportation Association (TMTA), TxDOT, and 16 citizens. The commission also considered TxDOT concerns about the legality of a dual speed limit in Texas.**

TxDOT, the City of Houston supported a 5 mph reduction from speeds posted before May 1, 2002, to address safety and legal concerns and to provide a more workable emission reduction measure.

**The commission is revising its speed limit strategy.**

TxDOT said it was unsure if it can legally establish dual speed limits, i.e., a different speed limit for cars and heavy duty trucks. The TMTA cited strong safety concerns with a 15 mph speed differential between cars and trucks, along with TxDOT, the Houston-Galveston Area Council (HGAC), Galveston-Houston Association for Smog Prevention (GASP), Brazoria County District Attorney's Civil Division (Brazoria County), and 3 citizens. Conversely, a member of the City of Brazoria City Council and 5 citizens approve of a dual speed limit, in particular a slower speed limit for large trucks due to pollution and safety concerns. The City of Houston is in favor of a slightly slower speed for heavy trucks to reduce pollution, but does not support the 55 mph reduction for any vehicles, citing it as an unworkable control measure. A Houston City Council Member asked the commission to work with TxDOT to encourage cities to implement No Trucks In The Left Lane ordinances. One citizen supports repealing 55 mph for truckers as a business incentive. Also, GHASP asked the commission to consider the added benefit of reduced particulate emissions from diesels before revising the 55 mph strategy, and to consider targeting the measure to roads with concentrations of heavy-duty vehicles.

**Highway safety, the legality of dual speed limits, and a No Trucks In The Left Lane policy are outside the scope of the commission's jurisdiction; these issues are the jurisdiction of TxDOT. However, the commission notes the safety concerns and has revised the speed limit strategy to eliminate a dual speed limit, accepting the TxDOT alternate proposal. The commission appreciates concerns about pollution, including particulate emissions, from large trucks. However regulation of heavy duty trucks is mostly the jurisdiction of the federal government under the interstate commerce clause of the U.S. Constitution, in particular, regulation of fuels and engine standards. Regarding the proposal to target only certain roads with speed reductions for trucks, it is the commission's view that given the regional nature of urban air sheds, the entire nonattainment area**

**should be considered as a whole when enacting control measures.**

The EPA expressed concern that if the state decides to drop the speed limit reduction in the HGA, it must show that this reduction measure is no longer necessary to meet federal clean air standards by the attainment date, November 15, 2007. GHASP stated the 55 mph speed limit is not essential, but until the attainment demonstration gap is closed it should not be completely set aside. GHASP, Environmental Defense, and 6 individuals advocated replacing the speed reduction measure with strategies that demonstrate effective emissions reductions and do not weaken the SIP, for example linking vehicle registration fees with vehicular emissions, improving traffic flow, and expanding daylight savings time. GHASP also cautioned against “double counting” SIP credit of TxDOT’s use of cleaner fuels as a replacement for speed reduction.

The Harris County Attorney (Harris County) supported the commission’s proposal to delay the 55 mph environmental speed limit (ESL) until May 2005, and the potential elimination of the 55 mph ESL pending the SIP mid-course review, citing an analysis performed by ENVIRON of TTI’s preliminary MOBILE6 analysis. ENVIRON concluded that the reduction in ground level ozone from reducing the speed of passenger vehicles from 70 mph to 55 mph will not have a measurable effect on ozone attainment in the area. Three citizens advocate repealing the 55 mph citing a small reduction in emissions. Conversely, 3 citizens support a speed limit reduction strategy no matter how small the emission reductions, citing health and environmental concerns.

**This SIP revision preserves the integrity of the Post 1999 ROP and Attainment Demonstration SIP, which was approved by the EPA. The commission concluded that the same amount of emission reductions are achieved by the attainment date, therefore the federally approved SIP, including the motor vehicle emissions budget (MVEB), are unaffected by this interim change, i.e., the interim between now and May 1, 2005. Furthermore, the commission will not know if the emission reductions achieved from this measure are necessary to achieve attainment until a complete analysis is conducted for the HGA midcourse review SIP, which will be submitted to EPA no later than May 1, 2004.**

**In the meantime, the commission directed staff to identify any possible control measure that could replace the speed limit reduction measure, should these emission reductions be required to demonstrate attainment. The commission appreciates the emission reduction ideas received and will consider each one of them. The commission agrees that following the SIP midcourse review, elimination of the 55 mph ESL in the HGA may be appropriate if it is not needed to demonstrate attainment.**

**Regarding the conclusion that small reductions in ground level ozone may not be appropriate to enact, the commission believes that because of the severity of the problem in the HGA, any measure no matter how small that reduces ground-level ozone in the HGA could be appropriate for consideration.**

Harris County asked the commission to accelerate development of an MVEB using EPA’s MOBILE6 emissions factor model before the mid-course correction SIP is developed. GHASP also noted the need for a MOBILE6 MVEB.

**The commission does not believe it is advisable to develop a MOBILE6 MVEB in isolation from the entire SIP midcourse review. Given new (and ongoing) scientific understanding of ozone formation,**

**the commission has directed staff to evaluate all sources of emissions in the HGA before the commission can evaluate and enact control measures to demonstrate attainment of the federal air quality standards. Furthermore, an MVEB developed before the midcourse review, would not incorporate the planning assumptions that will be used in the midcourse MVEB, thereby exacerbating the transportation conformity problem of synchronization of the SIP's MVEB with transportation plans. EPA approval of such an accelerated MVEB will trigger a new conformity determination, straining resources at HGAC that could be directed to development of the 2030 Metropolitan Transportation Plan in anticipation of the midcourse review SIP revision and accompanying MVEB.**

The HGAC, City of Houston, GHASP, the Greater Houston Partnership and its Quality of Life Advisory Committee, and Harris County expressed concern that a change in the 55 mph speed limit reduction strategy could jeopardize transportation conformity status.

**According to the FHWA, the agency which approves an MPO's conformity determination, the current SIP revision will not jeopardize its approval of the current conformity determination and will not trigger a new conformity determination.**

Fourteen citizens said the speed reduction strategy is based on invalid data and "junk science," citing new information released by the commission that expected emission reductions are lower than originally projected. Among the opinions cited were that revised estimates contribute to a lack of confidence in the state's air quality plan and in government in general, that politics rather than science is behind the state's decisions on this strategy, and that the state is acting merely to feel good about doing something about pollution. In addition, a Houston City Council Member testified that the data is not strong enough to mandate a 55 mph.

**The commission has focused immense staff and budgetary resources on enhancing understanding of formation of ozone in the HGA. Regarding emissions forecasting, the State is required by federal law to use the latest emissions factor model. Following is a history of the speed reduction measure, including the photochemical modeling and technical emissions inventory work to support the strategy. The December 2000 SIP revision for the HGA lowered speeds to 55 mph May 1, 2002 to reduce 12.33 tpd of NO<sub>x</sub> and 1.76 tpd of VOCs by November 15, 2007, the HGA required attainment date. Reductions were estimated using MOBILE5, an emissions factor model developed by the EPA. The analysis is Appendix N of the December 2000 SIP revision. On January 29, 2002, EPA released an improved emission factor model, MOBILE6. MOBILE6 preliminary reduction estimates are lower than MOBILE5 and are achieved mostly from heavy-duty trucks. The model improvements are many but one of particular interest here is the ability to more accurately capture the mix of vehicle types operating on Texas roadways. The January 2002 release of MOBILE6 has not provided staff sufficient time to complete a thorough analysis of the mobile source emission reduction measures in the State's federally approved SIP. A MOBILE6 analysis must be complete before such strategies can be reconsidered and incorporated into attainment demonstration modeling for the midcourse review SIP, the next major SIP revision. The midcourse SIP revision must be submitted to the EPA by May 1, 2004.**

Brazoria County supported the commission's proposal to delay implementation of the 55 mph speed limit until May 2005 pending the midcourse review, but is concerned that the implementation schedule to change the signs is unnecessarily protracted, i.e., the interim between now and May 1, 2005. Furthermore the county recommended an immediate repeal of the 55 mph ESL for all vehicles, citing EPA rules

providing states 18 months to remedy SIP deficiencies before sanctions are imposed. The West Columbia Chamber of Commerce also supported a repeal. In addition, the City of Freeport supported a repeal in Brazoria County citing its impact on tourism, and the Brazosport Area Chamber of Commerce also supported a repeal in Brazoria County. Without citing a specific reason, 6 citizens supported a repeal, and 3 citizens supported retention of an ESL, one advocating the need for effective public education about the benefits to air quality and health. Six citizens supported retention of an ESL to reduce pollution. Fifteen citizens asked the commission to repeal the measure immediately. Five citizens support an ESL in urban areas but advocate a return to original speeds in outlying areas.

**The commission does not believe it is advisable to repeal a speed reduction strategy in the interim (between now and May 1, 2005); repeal during the interim, a repeal in rural areas, or a complete repeal could jeopardize the integrity of the federally approved HGA SIP (adopted December 2000) because they would impact estimated emissions in 2007. A delay however does not impact the 2007 demonstration. The interim measure, a 5 mph reduction from original speed limits, would achieve about a 2.3 tpd reduction in NO<sub>x</sub>, according to preliminary analysis. The commission has attempted to accelerate the implementation schedule by moving forward its final consideration by more than two months to September 25 from December 4 and EPA agreed to simultaneously review and process (“parallel process”) the commission’s final revision. Lastly, the commission does not think it advisable to risk, for the first time in the state’s history, a finding by EPA of a SIP failure, even though the State would have 18 months to correct the problem.**

TxDOT expressed a concern about the ability to enforce a speed limit based on a visual determination of vehicle weight. Eighteen citizens expressed disappointment about the lack of speed limit enforcement, citing safety concerns. Seven citizens felt the commission’s current reduction to 55 mph for all roads in the HGA turned citizens into “lawbreakers.” Nineteen citizens supported retention of environmental speed limits to enhance safety. Conversely, 21 citizens supported repeal of an ESL, citing safety concerns.

**Highway safety and enforcement of posted speed limits is outside the scope of the commission’s jurisdiction; these are the jurisdiction of the Texas Department of Public Safety and TxDOT. However, the commission notes the concerns expressed and is revising the speed limit strategy, eliminating enforcement based on vehicle weight.**

Twenty-nine citizens expressed concern about increased pollution from slower speed limits, citing engine performance, increased congestion and stop-and-go traffic, aggressive driving and road rage, and increased time on the road. Three of the 29 felt owners of newer, cleaner cars were being punished for emissions from older vehicles and large trucks and one felt the “big three” automakers prevented development of mass transit in the HGA. Two of the 29 advocated mass transit rather than an ESL.

**Pollution is reduced from lowering speed limits because of the increased aerodynamic drag and friction that must be overcome for a vehicle to move at a higher speed. Drag and friction increase exponentially as a square of speed. The horsepower required to overcome drag increases as a cube of speed; it is about twice as great at 70 mph as at 55 mph. An engine works harder at higher speeds, which increases production of NO<sub>x</sub>. Although newer vehicles operate more cleanly than older vehicles, based on TCEQ technical analysis, the lower speed limit strategy does reduce emissions. In addition, TCEQ is performing a new analysis of the expected reductions using MOBILE6, an emission factor model released January 2002 by EPA, which more accurately captures the types and ages of vehicles operating on roadways, than previous models. The commission supports transportation emission reduction measures that decrease travel demand**

**including mass transit.**

Eighteen citizens advocated repeal of the ESL in favor of reducing emissions from the “real culprits,” industry and heavy trucks. One of the 16 felt weather patterns are the major factor in pollution in the HGA. These citizens felt that vehicles do not contribute much to the area’s air quality problems, yet they are being asked to bear an inconvenient and costly burden to solve the problems created by others. Conversely, the Sierra Club Lone Star Chapter’s Air Quality Committee testified that relaxation of the ESL would send the wrong message to the public, namely that vehicles are not part of the pollution problem.

**According the latest emissions inventory, 1996, cars and trucks contribute 24 percent of NO<sub>x</sub> emissions in the HGA, while industrial sources contribute 54 percent. NO<sub>x</sub> emissions are a main factor in the formation of ground-level ozone. The current SIP contains strategies to reduce emissions from both mobile and stationary sources. Ozone is not emitted directly into the air, but is formed when gases called nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds react in the presence of sunlight. NO<sub>x</sub> is usually a by-product of high-temperature combustion. Common sources are cars and power plants. VOCs include organic chemicals that vaporize easily, like gasoline. The 8-county HGA has been designated by the EPA as in severe nonattainment of the federal ground-level, health-based ozone standard. The HGA must demonstrate attainment of the standard by November 15, 2007 or face sanctions that include complete loss of highway funds and implementation of federal control measures, including limits on growth and development. Ground-level ozone forms readily in the atmosphere during hot and sunny days. A new TCEQ air quality study has shed additional light on the formation of ozone in the HGA, including the affect of afternoon Gulf Coast wind trajectories.**

Nineteen citizens objected to the ESL based on an improper use of government authority, citing a lack of consultation with citizens and their elected representatives, economic windfalls for police departments and insurance companies, and government stupidity. A Houston City Council member testified at a hearing on this matter stating regret at the high cost of changing the speed limit signs.

**Communication with the public and elected officials is not only a legal requirement, but also a top priority of the highest importance to the 3-member TCEQ commission. The commission strives to not only meet the letter of the law but also to go above and beyond what is required in order to provide open access to TCEQ’s processes for all Texans. In particular, regarding establishment of an ESL to reduce pollution from vehicles, the commission held local hearings around the area and provided an opportunity for written public comment. The measure was first adopted by the commission December 2000 to become effective May 1, 2002, providing a year-and-a half interim before the speed limit signs were posted. Regarding the proposal adopted today (September 25, 2002), the commission held three hearings, two at the Houston City Council Chambers and one at the Flukinger Community Center in Channelview; a fourth hearing was held in Austin. The commission provided citizens a period between June 5 and August 6 to provide written comments. Having said that, the commission will strive to ensure not only adequate but exceptional opportunities for citizens to participate in TCEQ processes – before commission decisions are reached. The commission acknowledges the high cost of implementing control measures enacted into law in the State’s air quality plan.**