January 14, 1998

EPA Response to Proposed Recommendations from the In-Use Deterioration and Modeling Workgroups

RECOMMENDATIONS OF THE IN-USE DETERIORATION WORKGROUP
Recommendations of the Data Analysis Team

I. Recommendations EPA should implement in MOBILE6

1. EPA should consider a broad range of mass emissions databases, including those reviewed by the Team and those which EPA has said it is still seeking to obtain and/or analyze (e.g., more complete Ohio IM240 data, California Pilot I/M Program data). EPA should report to the Team at a later date its proposal for the role of each data base in revising MOBILE, groupings of model year, technology, model year/technology, emitter categories, etc. The team wishes to review and discuss EPA's draft revision of the in-use deterioration estimates in the MOBILE model.

   EPA Response: EPA agrees that the data summarized in the workgroup report are enough to warrant a serious reassessment of the MOBILE5a emissions. EPA has considered the data during that reassessment. EPA has presented interim analyses to the Workgroup for review, including the model year/technology groupings chosen, and the role of each data base in revising MOBILE. The documentation for the proposed in-use deterioration estimates will be provided to the Workgroup for review.

2. EPA should acknowledge the overestimation that results when predicting future evaporative emissions based on current experience and existing technology.

   EPA Response: EPA agrees that cars meeting the new evaporative test procedures and standards should be modeled as being lower emitting in-use than previous cars. This was in fact the case in MOBILE5, but the size of the difference is worthy of reconsideration. The reconsideration ought to start with an understanding of the causes of high evaporative emissions in the older cars, and then apply an understanding of how changes in design and materials would affect those causes.

II. High Priority Recommendations - Start Implementation Immediately

3. EPA should take an active role in obtaining high quality data from state IM240 programs.

   EPA Response: EPA has obtained state IM240 data from Colorado, Arizona, Wisconsin, and Ohio. Effort in 1998 is limited due to staff time and resource constraints; however, we remain interested in encouraging and perhaps financially supporting better preconditioning, more full IM240 tests, and more careful recording of vehicle information, on a sizable random sample of vehicles.
4. An Auto/Oil hot soak pilot study has been conducted. In addition, CRC has conducted a real

time diurnal study that will measure 24 hour diurnal emissions from 151 vehicles. EPA is also conducting a diurnal emission study. The results of these analyses should be reviewed when available to provide insight into evaporative emissions deterioration.

EPA Response: EPA plans to use these data along with the data collected under EPA sponsorship.

5. The I/M provisions of the National Highway System Designation Act (NHSDA) of 1995 provide the opportunity to require high quality data collection from state I/M programs that would allow analysis that may shed light on several emission issues, including in-use deterioration. EPA should require states to collect and report I/M emissions data under this Act.

   EPA Response: EPA agrees completely with the goal of getting high quality data through the states' self-evaluation processes and then using it to help quantify in-use emissions deterioration as well as the specific effect of the I/M program. The statutory 18 month period is too short to set up good data collection processes to support as good an evaluation as desired by both EPA and the states.

   We are attempting to persuade states to do the best possible job, as defined through mutual discussions in which the EPA perspective will be informed by the recommendations of the in-use deterioration workgroup. However, a good result will depend on the interest and resources of the states, as EPA does not have compelling leverage over them.

III. High Priority Recommendations - Start Implementation within Three Years

6. Real world mileage accumulation rates should be determined using mileage data obtained from multi-year I/M programs. States should individually determine the mileage accumulation rates for their fleet from their I/M program data. Accumulation rates from at least three to four states from different geographic areas should be examined by EPA to shed light on regional differences in mileage accumulation.

   EPA Response: OMS agrees that better mileage accumulation rates will result in better decisions for a given region. However, we tend to feel that developing those better rates is the responsibility of the regional planning agencies. Multi-year I/M data bases are certainly an important starting point. The state/EPA Emission Inventory Improvement Program sponsored a guidance document that covered this subject (June 1996, Sonoma Technologies).

   A number of workgroup participants have stated that they have done this type of analysis. OMS encourages them to report it in a manner that would give planning agencies practical guidance on how to do it.

   Mileage accumulation rates for MOBILE6 may be based on 1995 Nationwide Personal Transportation Survey (NPTS) data, but a final decision has not been made.

7. Multi-year data sets that track individual vehicles over time and mileage should be established. It would also be useful to collect owner history and maintenance practices to shed light on post-purchase behavior.

   EPA Response: This concept is intuitively appealing, but it is not a trivial task to collect such a data set. No study is planned by EPA in 1998.

8. Real world data should be collected on new evaporative emission control systems.

   EPA Response: EPA agrees. In 1997, we tested a small number of vehicles with the new procedures, to be certain that the test equipment, procedures and data handling systems are fully operational. Our plan for 1998 and 1999 was to increase the level of evaporative emissions testing of in-use vehicles of the new designs; however, this work has been delayed due to budget constraints.

9. EPA should monitor the average lifetime and lifetime mileage of light-duty vehicles, which is expected to be well in excess of 10 years/100,000 miles, commit resources to test vehicles with mileage in excess of 100,000, and determine the impact of these vehicles on in-use emissions.

   EPA Response: EPA agrees on the need. Of course, this need competes for resources. In 1998, EPA does not plan to specifically target the over 10/100,000 population.

   We monitor survival and average lifetime via the AAMA Facts and Figures publication. We periodically review sources of estimates of average mileage at a given age, and will update the estimates in MOBILE6.

   We hope that one or more IM240 programs can provide a continuing flow of data on in-use emissions of cars of all model years and mileages. This would be an essentially free source of data, but would only address the case of cars subject to the particular type of I/M regime applicable in the area doing the testing.

10. EPA should explore ways to redesign the state credit system to make it reflect the actual performance of emissions reduction programs. This would promote a system of better data collection, evaluation of programs, and a move toward more effective, lower cost in-use emission reduction policies. One approach EPA could examine is to grant credits on a temporary basis, with continuation of the credits contingent on evidence from actual program performance.

    EPA Response: OMS agrees that the current SIP credit system raises the issues noted. The issues extend beyond mobile sources, and need to be discussed in the context of SIP "demonstration" policy in general.

The great challenge is to get the right type of data that would allow a check on the accuracy of the original credit. If this could be done at reasonable cost and effort, it would be reasonable to give more weight to states' good faith credit estimates initially, but to insist on confirmation eventually, as recommended.

We hope that the I/M evaluation process will result in much better data for assessing the level of fleet emissions on a continuing basis. Determining the role of various overlapping programs in getting to that level of emissions is a further challenge.

11. EPA, along with state regulators, industry representatives, and academics, should encourage and participate in efforts to include the behavioral response of motorists, mechanics, and states to regulations as part of data collection efforts, and to ensure that evaluation of policies to reduce in-use emissions include, when possible, an assessment of the behavioral response to that policy.

    EPA Response: OMS has not yet considered whether and how it could implement this recommendation. Most of EPA's own ongoing data collection is aimed at the national-level vehicle, engine, and fuel industries, for which behavioral responses are less of an issue. Some of the questions raised in the recommendation are ones for which states would have to collect data.

IV. Medium Priority Recommendations - Can be Started Immediately

12. EPA should encourage analysis of those large remote sensing data sets whose quality can be evaluated.

    EPA Response: If the Georgia Tech remote sensing practices could be shown to be equivalent to those used in Arizona, analysis of Arizona remote sensing and IM240 data on the same cars would add credibility to conclusions reached on the remote sensing-only data collected by Georgia Tech. Alternatively, a new effort could be made to get dual tests on cars in Atlanta or elsewhere. Georgia Tech researchers had an admirable plan to do this, but in conjunction with some state IM240 programs that did not start operation when hoped.

    No EPA analyses of large remote sensing data sets are planned with 1998 resources. EPA-sponsored work in this area with 1997 resources is taking place in 1998. In addition, we are reviewing RSD analyses submitted by stakeholders and academics.

13. A comparison should be made of vehicle emission data from vehicle owners who respond to mail and phone vehicle recruitment efforts with those who do not.

    EPA Response: OMS agrees.

    The hard part is to get emissions levels from a representative sample of cars that have not responded to recruitment, without having to resort to only remote sensing data.

One possible approach would be to run a recruitment effort in a place where periodic IM240 results are available from the state. Recruitment would be conducted to the point of being sure which owners have responded all the way, and then responders' and nonresponders' most recent IM240 results would be compared. (FTP or other testing would not be needed.)

EPA considered such an experiment in 1998, but no work is planned due to resource constraints. EPA encourages any ongoing industry testing programs for in-use cars to also investigate and document this issue.

14. The states and EPA should work together to develop protocols for data collection associated with I/M programs. Data to be collected should include results of emissions tests (pass, fail, and emission levels) before and after repair, types of repair, repair effectiveness, and the cost of repair. In addition, data should be collected for random samples of in-use vehicles not associated with an I/M test. Data collected by the states should be well documented and in a form that can be easily retrieved.

    EPA Response: EPA agrees with the need for consistent, high quality data collection; however, reliable data on types of repair and cost of repair are notoriously hard to collect. In addition, states are unlikely to choose to spend the resources to obtain data on cars not subject to I/M, beyond remote sensing data.

    EPA will be working to get states and their contractors to collect and store data so that it is more easily retrieved and understood by EPA, other states, and researchers.

    In general, for some issues it is not necessary for every state to collect data independently. For questions that depend more on the physical behavior of vehicles than the behavior of people, a small number or research sites should suffice.

<u>Recommendations of the New Technology/Solutions Team</u>

I. High Priority Recommendations - Start Implementation Immediately

1. EPA should begin immediately to develop and implement a plan to assess, on an ongoing basis, the real-world effectiveness and cost-effectiveness by which OBDII identifies emission-related problems and high emitters, and effects their repair. The study should include an evaluation of vehicle owner response to the OBDII warning light.

    EPA Response: EPA is pursuing several lines of research on OBD:

    EPA is continually monitoring one Utah county's manual but centralized inspection of OBD systems, to get information on readiness for testing, connection problems (if any), and the frequency of codes and MILs.

EPA also plans to continue tracking programs that are conducting OBD tests, in addition to contracting services for a program to test vehicles with naturally occurring failures, i.e., non-engineered failures. The test program will perform both the Federal Test Procedure (FTP) and OBD tests on each of approximately 200 vehicles, followed by repairs and repeat tests. The goals will be to: 1) determine how well OBD correlates to the FTP, 2) determine how effective OBD is at identifying excess emissions and defective components, and 3) establish the emissions reductions and associated credit levels achievable by using OBD as a potential replacement for tailpipe testing.

The Agency began the study October 1, 1997. Two years are needed to ensure ample time and fleet penetration of OBD-equipped vehicles, so that enough vehicles can be recruited for the study. A third year will be needed to allow sufficient time to analyze the data generated by the study and to develop and assign appropriate credits.

EPA is continually seeking to partner with stakeholders on this data gathering exercise, seeking testing or technical support. We have also approached auto manufacturers to participate and have a preliminary commitment from at least one of the “Big 3" to collaborate on technical issues. We are also working with the states and the manufacturers on developing implementation guidelines for the states to follow once we accord credits to OBD and require its use in I/M programs. EPA has a contract to run a pilot OBD I/M lane to assist in generating implementation guidelines. This pilot lane is scheduled to begin operation in January/February 1998.

EPA intends to obtain a data base of vehicles with both OBD and I/M emission scores from a currently operating I/M program. Efforts will focus on obtaining matched OBD and IM240 data. We envision this being an ongoing data collection effort for many years, either as an OMS-sponsored project or as a natural result of one or more states’ I/M procedures. We will try to investigate repair issues, also with auto and service industry participation.

In the lab, EPA will study:
Scan tools and technologies
Implanted malfunctions
Aged and aftermarket component issues
Alternate and dual fuel vehicle issues
Technology forecasting

2. For vehicles equipped with OBDII diagnostic systems, the Team assessed the potential for OBDII system inspections to replace the tailpipe emission and functional tests now used in I/M programs. The Team found that OBDII will likely be a more effective inspection tool because it has the potential to identify more causes of high emissions earlier than do emission and functional tests. Based on this assessment, the Team believes that inspection of the OBDII system should be used in all I/M programs for 1996 and newer models, instead of existing tests. Inspections of OBDII can be implemented as soon as technical guidance on how to perform OBDII inspections is developed and field tested in an operating program. The Team recommends that final technical guidance be issued by EPA no later than January, 1999.

   Due to the lack of field data on actual in-use OBDII-equipped vehicles (all new models use OBDII beginning in 1996), it is not possible to develop and verify OBDII-specific emission reduction credits at this time. The Team recommends that data be collected to confirm the efficacy of OBDII inspections as soon as possible. These data should also be used to establish OBDII-specific emission reduction credits, which EPA should issue no later than December, 2002. In the interim, the Team recommends that EPA provide for no loss of emission reduction credit for states that adopt periodic OBDII-based inspections in lieu of emission and functional tests. The Team believes there is little risk of loss of emission reductions in the interim, and a strong possibility of increased emission reductions, if this recommendation is implemented. The risk of losing emission reductions is minimal because OBDII should identify more causes of high emissions than current inspection procedures, and because the expected failure rate of 1996 and newer models over the next six years is low, placing fewer emission reductions at stake.

   EPA Response:

   <u>Doing OBD Inspections</u>:

   The Agency agrees that it may not be beneficial to do tandem testing and is concerned that requiring states to perform OBD checks in tandem in addition to regular tailpipe and evaporative emission testing may not generate enough additional emissions reductions to justify the added cost in time and equipment. There is virtually no assurance that dual testing will generate either emissions reductions over and above what would be generated with tailpipe and evaporative testing alone or provide useful data that can be used to evaluate the efficacy of OBD testing in an I/M setting.

   It is important to note that EPA does not want to interfere with any plans states may currently have to implement OBD checks for vehicles so equipped, as a regular part of their I/M programs. In fact, we support and commend those states who choose to do so before the new deadline of January 2001. We believe there are many benefits to states bringing OBD online as soon as practicable. It introduces the public and the repair industry to the new technology, increasing their awareness and acceptance of its crucial role in emission control. It also enables the I/M programs to work out implementation issues.

Although we will continue to support such efforts by states, we cannot, at this time, allow states that drop tailpipe testing in lieu of OBD to retain emissions reductions credits for affected vehicles. It is important to note that credits *may* be available before January, 2001, depending on the progress and findings of the ongoing study. In which case, states may opt to implement OBD checks before the new deadline, and earn those credits, but will not be required to do so until January, 2001.

Not Doing Tailpipe and Evaporative Testing

OMS understands the reasons behind the recommendation, and would consider it good news if OBD inspection obviated the need for tailpipe and evaporative testing. Our current impressions of the risks match those of the workgroup. While we cannot be certain that OBD systems on every car will work as intended, the mounting evidence on the small amount of in-use deterioration on recent cars during their first several years of use argues strongly for a study period of several years. We believe that credit determination will be available in time for states to implement the OBD checks and earn those credits by January 2001. However, OBD systems should be continued to be studied well beyond that date, to see how well OBD continues to work on older and older vehicles. One cannot rule out changes based on any new findings.

We do want to share the workgroup's thinking and the recent evidence on the in-use emissions of recent model year vehicles with a broader set of state I/M officials, however, and listen to their advice also. Pending their input, we may be inclined to allow states to omit tailpipe and evaporative tests for 1996 and newer cars if they are passing and failing according to the OBD inspection. We may offer it as an option, rather than as a strong recommendation, as we feel each state must weigh the considerations for itself.

It may take an amendment to the I/M rule to allow tailpipe and evap system testing to be omitted.

Finally, while the recommendation regarding emission reduction credit during the interim period may be attractive in that it represents no change from what each state has been expecting and therefore in a sense reflect the current uncertainties, it would result in unequal credit for states doing equal testing.

3. For vehicles equipped with OBDII diagnostic systems, EPA should initiate a study of alternatives to periodic inspections which could reduce the cost and inconvenience of I/M and achieve public acceptance. The study should at a minimum investigate alternative technological approaches. EPA should then develop prototypes and test under real-world conditions those alternatives found to be promising in terms of cost-effectiveness and public acceptance. A final report should be issued by June 1, 1999.

EPA Response: EPA's understanding is that California will undertake a significant study addressing both technical and social policy issues of transponders and other periodic and

non-periodic approaches to emissions "inspections" for in-use vehicles. EPA appreciates California's leadership, and will wait to learn the details of the California work plan before deciding what if anything EPA can and should do itself for the next couple of years. EPA cannot commit to a specific reporting date.

EPA recognizes the highly controversial nature of the civil liberties and social policy issues associated with remote monitoring of private vehicles. Therefore it is likely, at least initially, that any scheme for using transponders will have to be voluntary on the part of the state and perhaps also on the part of the vehicle owner, perhaps as an alternative to periodic inspections which would otherwise continue to be required. EPA's roles would be (1) to establish requirements for new vehicles which facilitate state choice without imposing significant unnecessary costs on vehicle purchasers in other states, (2) to work to prevent fraud and evasion, and (3) to establish credits that reflect the best estimate of actual effect.

4. EPA should take steps to harmonize its OBDII regulations and requirements with those of the State of California.

   EPA Response: EPA will soon go final with the OBD Harmonization rule.

   Highlights include:
   Systems/components to be monitored (e.g., evap leak check required)
   Criteria for failure (i.e., thresholds at 1.5 times the standards)
   Remove sunset on EPA allowance of optional compliance with CARB OBDII

5. EPA should expeditiously proceed to adopt and implement by rule a National Gasoline Sulfur Cap based on "Level Three" refinery sulfur control to cost-effectively reduce deterioration of emission control system performance of Tier 0, Tier 1 and LEV motor vehicles. Adequate safeguards should be provided to ensure that this requirement would not create gasoline properties which would have other adverse impacts on emissions or vehicle performance. In addition, EPA should provide regulatory flexibility and temporary relief for economic hardship cases in a manner that does not significantly erode the environmental benefits of this program.

   EPA Response: See Dick Wilson's response to NPRA.

6. It is believed that the motor vehicle fleet will be substantially changing to advanced, LEV-type-technology-vehicles ("LEV's"). If the current EPA, auto and oil company LEV testing programs which include various levels of sulfur in gasoline, confirm recent limited LEV vehicle testing data, EPA should proceed to adopt and implement a program by rule that will cost-effectively supply gasoline for LEV's with an appropriate sulfur cap based on "Level Four" refinery control (such as 80 ppm) in order to achieve expected, certified emission control performance. Adequate safeguards should be provided to insure this action will not create gasoline properties which would have other adverse impacts on emissions or vehicle performance.

EPA Response: See Dick Wilson's response to NPRA.

II. High Priority Recommendations - Start Implementation within Three Years

7. EPA should further investigate and recommend, if warranted, incentive programs which encourage owners of vehicles with illuminated OBDII warning lights to seek and achieve rapid repair.

   EPA Response: EPA shares the skepticism regarding voluntary response to OBDII warning lights particularly on older cars. Until there is no doubt about how well owners would respond, annual or biennial inspections by an independent party should be required. Incentive programs aimed at in-use emissions are the focus of the Innovative & Incentive-Based Transportation Policies Workgroup.

8. EPA should review its regulation of aftermarket parts to determine which parts may cause an increase in in-use emissions because they are not functionally equivalent to original equipment manufacturer parts. This review should include, at a minimum, aftermarket gas caps and aftermarket catalysts as they relate to OBD-equipped vehicles.

   EPA Response: EPA would prefer to target and research those types of aftermarket parts for which there is anecdotal or engineering support for suspicion and concern, rather than undertake a very broad testing program. We agree that in the last few years, anecdotal reports have created a reason for concern about aftermarket gas caps. EPA is also interested in the long term performance of the carbon material in evaporative canisters, as its functionality is not tested by OBD. No work is planned in this area in 1998, due to resource constraints.

9. EPA should evaluate the effectiveness of a program which replaces selected emission critical parts on older or higher mileage non-OBDII-equipped vehicles. Based on the evaluation, and in conjunction with one or more states and other interested parties, EPA should conduct a pilot program to evaluate selected emission critical parts to determine which part(s) offer the greatest potential for meaningful, cost-effective emission reductions by being replaced. Based on the results of this evaluation, EPA should determine the most effective way to implement a replacement program for emission critical parts identified as most promising. The replacement program, which may also include an incentive-based approach, should establish emission reduction credits for states that choose to implement the program.

   EPA Response: EPA agrees that any program of this sort has risks as well as possible benefits, and should not be recommended or implemented without better data. Unfortunately, the vehicles for which we have suggestive evidence of a benefit from this type of program are advanced in years already. By the time research can be carried out and conclusions reached, many will be retired. There are also cost considerations in conducting this type of research, difficulties in securing representative participation by cars this old, and administration and policy issue for those that would have to implement it. Consequently, no work in this area is planned in 1998.

However, it may make sense for EPA and states to get out a strong “replace me first” message to owners of cars that have failed an I/M test. The net usefulness of this to the environment and vehicle owners is less ambiguous.

10. EPA should develop a strategy that will ultimately insure repair or scrappage of all old, highly polluting vehicles that might otherwise qualify for a vehicle inspection program waiver of full repairs. EPA's strategy should provide states with flexibility to choose from a range of options that will effectively accomplish this objective, including phase-out of waivers and repair subsidy or scrappage programs. Revenues for the latter could come from innovative fee policies that provide incentives for motorists to drive clean cars and for mechanics to make cost-effective repairs.

    EPA Response: EPA agrees that once identified as high polluting, most vehicles should be fixed or retired. Current waiver practices cannot be the best possible approach.

    The difficult issue for states is the social impact of a more restrictive policy on waivers, as has been recognized in the Team’s discussions. States can manage this impact through some sort of subsidy or insurance system, and so do not need to avoid it by giving a high percentage of waivers or tolerating program evasion. Schemes for doing so will be explored by the new workgroup on incentive programs.

    EPA can encourage states, provide ideas and information, and set up emission reduction credits that reflect the actual benefits of various approaches as well as possible. We do not have commanding leverage over what states actually do, however.

    Recommendation 11 below is related.

III. Medium Priority Recommendations - Start Implementation within Three Years

11. EPA should investigate methods of identifying very clean individual vehicles and groups or categories of vehicles, and determine if these vehicles could be subjected to a reduced frequency of inspection or given other incentives without reducing emission reduction benefits.

    EPA Response: EPA sponsored some analysis of model-specific in-use performance in 1997, which will give some technical insight into this concept. Resources are not available to continue this work in 1998. There are of course legal issues also, given the current specification of annual or biannual testing in the Clean Air Act. Recently, OMS has been asked to review analyses of clean screening and high emitter profiling techniques performed by other parties.

    EPA strongly agrees that continuation of favorable trends cannot be presumed, and so any scheme like this would need to continuously monitor the vehicles getting special treatment. This monitoring would have to use a reliable emissions test procedure and capture a

representative sample of vehicles.

Finally, no system will be perfect, and some reduction in emission benefits must be expected. If necessary, other compensating changes in the I/M program or other SIP programs could make up the difference in a more cost effective way.

12. EPA should perform a detailed investigation of the emission reductions achieved from repair of vehicles failing dynamometer I/M tests and the repair costs. At a minimum, the investigation should identify those repairs that yield substantial emission reductions, those repairs that are costly yet provide only small emission reductions, and those actions states could take to reduce the economic hardship of repairs on vehicle owners with low income. Based on this evaluation, EPA should develop and recommend specific repair procedures which result in optimum emission reduction effectiveness and improved cost effectiveness of enhanced I/M. In considering optimal repair procedures, EPA should evaluate a policy of allowing fees to be paid in lieu of repair of marginally-emitting vehicles or vehicles in need of specific repairs which have poor cost-effectiveness.

    EPA Response: Based on economic principles alone, owners of failed cars ought to be given the option of using emission reduction credits instead of repairing/retiring their car. This is most applicable for cars with only a marginal amount of excess emissions, since for these even a small repair cost may be cost-ineffective. It may also apply to cars with very high repair costs, even if their emissions excess is large. The problem is in knowing before repair how much emission reduction could and would be achieved by repair, and at what cost. Also, there are administrative complexities in a credit program that would not exist in a mandatory repair program.

    Transient mass emissions testing is the only way at present to be sure about a car's emission level, and not all states will be using it as their inspection test. EPA also questions whether it is possible to predict the cost of necessary repairs before they are performed. In addition to technical uncertainty about what a car really needs, there is behavioral uncertainty about how efficient and honest the hypothetical repair technician would be. Owners would therefore be making decisions about whether to attempt a repair or buy credits with considerable uncertainty about relative costs to them. States would be accepting credits with uncertainty about whether they are really equivalent to the repair that would have happened.

Thus, there certainly are issues to be addressed through research, before any implementation.

The workgroup on incentives can address this area at greater length. Meanwhile, recommendation 10 on repair of all cars should be emphasized.

RECOMMENDATIONS OF THE MODELING WORKGROUP

The Modeling Workgroup developed a detailed list of projects/analyses for MOBILE6. In addition, the Workgroup made recommendations for validating the MOBILE model.

Please refer to the documents on the OMS MOBILE6 Web site (http://www.epa.gov/omswww/m6.htm) for more information regarding the analyses and proposals to date.