

**Atlanta MVEB for Transportation Conformity  
Adequacy Determination- Response to Comments  
December 18, 2001**

**I. NO<sub>x</sub> SIP Call**

**Comment:** It is not clear that Georgia is “affected by transport” of ozone precursors in a manner contemplated by the extension policy. Significant effects are not apparent from EPA’s *Finding of Significant Contribution & Rulemaking for certain States in the Ozone Transport Assessment Group for Purposes of Reducing Transport of Ozone*, 62 FR 60318 (November 7, 1997). Explain specifically the extent to which upwind sources of air pollution are “significant” and the specific basis for EPA’s conclusion.

**Response:** EPA provided all the evidence and supporting documentation that Atlanta is significantly affected by transport from upwind states in the nitrogen oxides (NO<sub>x</sub>) State Implementation Plan (SIP) Call rulemaking (63 FR 57356, Oct. 27, 1998). This rule was upheld by the court in *Michigan v. EPA*, 213 F. 3d 663 (D.C. Cir. 2000).

The SIP for bringing the Atlanta area into compliance with the 1-hour ozone National Ambient Air Quality Standards (NAAQS) relies upon reductions from implementation of the NO<sub>x</sub> SIP Call implemented in upwind states. Appendix G of the EPA NO<sub>x</sub> SIP TSD referenced above, “Evaluation of Contributions - Tables of Metrics, 1-Hour CAMX: Upwind States to Downwind States,” page G-6, gives average contributions to an Atlanta area exceedance as follows: Alabama 8 percent; Kentucky, 1 percent; North Carolina, 1 percent; South Carolina, 1 percent; and Tennessee, 4 percent for a total contribution of 15 percent. The State calculated the effect on a monitored exceedance occurring at 125 ppb, the result being a contribution of 18.6 ppb (125 ppb x 15 percent). The implementation of the NO<sub>x</sub> SIP Call in 2004 would reduce the contribution to ozone exceedances by 18.6 ppb. Thus, EPA has indicated that Georgia is affected by upwind transport.

**II. Adequacy Process**

**Comment:** A decision may not have the force of law unless Administrative Procedure Act (APA) procedures are followed. For EPA to give legal effect to the motor vehicle emissions budget in a submitted SIP, it must approve the motor vehicle emissions budget only after notice and an opportunity for comment pursuant to the rulemaking provisions of the APA.

The CAA requires that EPA approve a motor vehicle emissions budgets as a portion of a plan before it may take effect for transportation purposes. Comments submitted in response to EPA’s December 1999 rulemaking notice, must be addressed before EPA takes final action to find the motor vehicle emissions budgets adequate without at least

addressing the objections that have already been submitted as part of an ongoing EPA rulemaking. Furthermore, EPA must give notice and take comments on the changes made to the SIP (October 1999 and July 2001 SIPs).

**Response:** EPA is conducting its adequacy determination on the motor vehicle emissions budgets in the Atlanta attainment demonstration pursuant to its regulations governing adequacy at 40 CFR 93.118(e). EPA established these regulations through notice-and-comment rulemaking in 1997. In the preamble to the final regulations, EPA clarified in response to comments that it would be conducting adequacy determinations through informal adjudication procedures and not through APA rulemaking. See 62 Fed. Reg. 43780, 43782-3 (August 15, 1997). EPA stated there that adequacy determinations “are only administrative reviews and not substantive rules.” Id. EPA clarified that in lieu of notice-and-comment rulemaking on individual adequacy determinations, EPA was establishing the criteria for determining adequacy in the conformity rules and was requiring that in making an adequacy determination EPA must review comments submitted to the states and the states’ responses thereto.

Certain aspects of the adequacy rules at 93.118(e) relating to use of budgets that EPA had not affirmatively found adequate were challenged in court and subsequently remanded to EPA for further rulemaking in Environmental Defense Fund v. EPA, et al., 167 F.3d 641 (D.C. Cir. 1999). However, the court remanded only 93.118(e)(1) which contained the offending provision, and did not remand either 93.118(e)(4) which establishes the criteria for finding budgets adequate or 93.118(e)(5) which requires EPA to review state-level comments and responses. Thus, it has been plain as a matter of regulation since promulgation of EPA’s adequacy rules in 1997 that adequacy determinations would not be conducted through notice-and-comment rulemaking. Further, subsequent to the 1999 court case, EPA reconsidered at a policy level the prior decision to rely only on a review of state-level comments as required by the conformity rule, in response to concerns expressed by the litigant in that case. EPA determined that although it would continue to complete adequacy determinations through informal adjudication pursuant to the rule, it would provide for an informal 30 day public comment process to be conducted through an electronic website. This process, developed in conjunction with the litigant, is outlined in EPA guidance “Conformity Guidance on Implementation of March 2, 1999 Conformity Court Decision,” from Gay MacGregor, Director, Regional and State Programs Div., Office of Mobile Sources, to Directors, Regional Air Programs, dated May 14, 1999. EPA has consistently implemented this guidance in making adequacy determinations since 1999, and is doing so in this case as well.

Nothing in either the Clean Air Act (CAA) or the APA requires EPA to conduct adequacy determinations through notice-and-comment rulemaking. EPA acted reasonably in choosing to conduct such determinations through informal adjudications. Adequacy determinations are factual determinations applying pre-established criteria to a specific area, and do not create new legal obligations. Courts have clarified that actions need not be conducted through rulemaking simply because they affect individual rights. See

Fertilizer Institute v. EPA, 935 F.2d 1303, 1308 (D.C. Cir. 1991). Although they may only be binding on the participants in the adjudication, final agency actions completed through informal adjudication do have the force and effect of law. See Fontana v. Caldera, 160 F.Supp.2d 122, 128 (D.D.C. 2001)(informal adjudication has force and effect of law and is entitled to judicial deference under standard in Chevron and Mead).

EPA's 1997 conformity rule and the 1999 guidance described above also make clear that where no prior budget has been approved for a certain year and CAA requirement, conformity will be measured against submitted budgets that EPA has found adequate, even prior to EPA approval of such budgets. As noted, other than the provisions concerning budgets that EPA has not affirmatively found adequate, this provision of EPA's rule and guidance has been established since 1997 and was not disturbed by the court's review of those rules. In fact, the court recognized that the statute does not dictate how conformity should be determined if the approved SIP does not contain applicable budgets. EDF v. EPA, 167 F.3d at 650. In addition, the use of adequate budgets as a standard for measuring conformity in the absence of applicable approved budgets has also recently been noted with approval by another appellate court. See 1000 Friends of Maryland v. Browner, \_\_\_ F.3d \_\_\_ (4<sup>th</sup> Cir. 2001)(EPA use of submitted and not yet approved budget is not inconsistent with section 176(c) of the Act).

Through the web process described above, EPA sought comment on all changes to the Georgia 1-hour attainment SIP Motor vehicle emissions budgets as reflected in the latest July 2001 submittal. EPA also sought comment on the October 1999 SIP submittal and posted responses thereto on the web page:

<http://www.epa.gov/otaq/transp/conform/adequacy.htm>.

The State of Georgia submitted a SIP on July 17, 2001, that established an motor vehicle emissions budgets for transportation conformity purposes. EPA's regulations identify the criteria to judge the adequacy of the submitted motor vehicle emissions budgets (40 CFR 93.118(e)(4)). EPA interprets the general adequacy criteria with respect to the Atlanta attainment demonstration submissions as follows:

**Rule:** The State SIP must explicitly identify and quantify motor vehicle emissions budgets for NO<sub>x</sub> and volatile organic compounds (VOCs).

**Response:** The Georgia ozone attainment SIP provides an explicit motor vehicle emissions budgets for VOC and NO<sub>x</sub> .

**Rule:** The motor vehicle emissions budgets, when considered together with all other emission sources, must be consistent with attainment.

**Response:** For the reasons described above, the Agency thinks it is appropriate to evaluate attainment for Atlanta based on an attainment date of 2004. EPA has

proposed approval on December 11, 2001, that the submitted SIP demonstrates attainment by 2004, and the Motor vehicle emissions budgets is consistent with that demonstration.

**Rule:** The budgets must be consistent with and clearly relate to the emissions inventory and the control measures in the submitted SIP.

**Response:** EPA interprets this to mean that the budgets must come from the local nonattainment area motor vehicle emissions inventory for the year that the SIP is demonstrating attainment, and that the motor vehicle emissions budgets must reflect appropriate and up-to-date projections of motor vehicle emissions for the attainment year. The local motor vehicle emissions inventory that establishes the budgets must include the effects of all motor vehicle controls that will be in place by the attainment year, including the federal measures and the mobile source control measures assumed in the NOx SIP Call. Also, the control measures assumed in the modeled attainment demonstration must be specifically identified and their emission reductions must be quantified. If the control measures are not already adopted, the SIP must include commitments to adopt these measures and schedules for adoption and implementation. Motor vehicle emissions budgets can be established based on a commitment to adopt the measures needed for attainment and identification of the measures needed.

Our preliminary conclusion is that the Georgia SIP satisfies these requirements. The SIP demonstrates attainment by 2004 and contains all of the measures to support this demonstration. The State identified additional emission control measures beyond those modeled as part of the attainment strategy. These measures were developed and adopted as State rules and are reflected in the motor vehicle emissions budgets. EPA approved these rules on July 10, 2001 (66 FR 35906). The Georgia Motor vehicle emissions budgets meets these requirements and therefore, is adequate for conformity purposes.

### III. Extension of Attainment Date

**Comment:** The use of attainment dates other than the statutory attainment date for the purposes of determining the magnitude of emissions reductions needed for attainment is unlawful. Therefore, EPA may not rely on its date extension policy to find adequate Motor vehicle emissions budgets based on an attainment demonstration that delays attainment until 2005.

**Response:** In the December 16, 1999, proposal regarding Atlanta's attainment demonstration, EPA proposed that if it finds that Atlanta is eligible for an attainment date extension under this policy, then its attainment date would be extended from 1999 to 2003.

EPA finds it unnecessary here to address the substance of commentors' objections to the attainment date extension policy, since whether or not the policy is applied to Atlanta, it is reasonable to expect that the area will be subject to the later attainment date of 2004- a one year delay from 2003 based upon the D.C. Circuit's decision in the NOx SIP call litigation to delay the source compliance obligation to 2004. Even if the attainment date extension policy is not applied to Atlanta, and even assuming that EPA takes final action to determine that Atlanta did not attain by its original attainment date of 1999, the area would be reclassified as a severe area with an attainment date later than 1999 – as expeditiously as practicable, but no later than 2005. The State has determined in the submitted SIP that attainment as expeditiously as practicable would be no sooner than 2004.

Thus, it is reasonable to forecast an attainment date for the area of 2004, regardless of whether the area is determined to be entitled to an extension under EPA's transport policy. Since the attainment date for purposes of an adequacy determination would be the same – 2004 – whether or not the area is given an attainment date extension or is reclassified, issues regarding the validity of the attainment date extension policy are irrelevant to the adequacy determination, and need not be resolved in this rulemaking.

#### **IV. Attainment Demonstration**

**Comment:** Now that EPA has promulgated a revised 8-hour NAAQS for ozone at 80 ppb that requires substantially greater emissions reductions for attainment than the former 120 ppb (0.12 ppm) standard, implementation of the 1-hour NAAQS must be seen as an interim strategy toward ultimate attainment of air quality adequate to protect public health. Attaining the 1-hour NAAQS is not adequate to protect public health for all the reasons the Administrator determined in her NAAQS review. Therefore, protection of public health demands more than implementation of measures to meet the 1-hour NAAQS. As an interim strategy, EPA must at least ensure that measures implemented now will be sufficient to fully meet the 1-hour NAAQS and make as much progress toward implementing the 8-hour NAAQS as the requirements of the CAA and NAAQS regulations require.

**Response:** As an initial matter, these comments are outside the scope of this rulemaking. EPA's review here is focused on whether the submitted plan meets the statutory requirements for attainment of the one-hour ozone standard. Nevertheless, EPA believes the reductions in ozone precursors in this plan will provide reductions both toward attainment of the one-hour standard and substantial progress toward the 8-hour standard. In addition, while the focus of the plan is on reducing NOx emissions, NOx and VOC emissions will be reduced by approximately 22.08 percent and 50.77 percent respectively from 1990 levels. Again, while EPA believes these additional air quality benefits will result from the implementation of this plan, the approval of the plan depends, as a legal matter, only on whether the plan will result in attainment of the one-hour ozone standard

**Comment:** The NAAQS require that in order to demonstrate attainment of the 1-hour NAAQS that no more than 4 ambient ozone concentrations exceed 0.12 ppm (235 mg/m<sup>3</sup>) within any three-year period. That standard was based on the evidence needed to establish a margin of safety for ozone. Unlike the 8-hour standard, the 1-hour standard contains no “rounding convention.” No provision of the rule provides authority for EPA to approve SIPs that will only achieve 124 ppb (242.6 g/m<sup>3</sup>). Thus even if EPA has authority to adopt WOE criteria as a substitute for modeled demonstrations of attainment, which we dispute, then the Georgia SIP submission does not demonstrate attainment of the 1-hour NAAQS because it only proposes to reduce ambient ozone to 124 ppb.

**Response:** The commenter is correct in asserting that the 1-hour ozone NAAQS contains no rounding convention. The 1-hour ozone National Ambient Air Quality Standard (NAAQS) is 0.12 parts per million (ppm). Therefore, the act is silent on the use of conventional rounding, such as 124 ppb to 120 ppb. Since air quality models predict ozone in units of ppb, the conventional rounding was used. This seem appropriate given inherent uncertainty in input data estimates and model formulation. There is a rounding convention that is used to determine when an exceedance occurs in both modeling and monitoring. Air Quality monitors provide data beyond the two significant digits. Rounding is needed to determine if the NAAQS is exceeded. Any monitored 1-hour ozone value from 0.120 to 0.124 ppm does not represent an exceedance but does indicate compliance with the NAAQS. An exceedance of the NAAQS occurs at 0.125 ppm and above. Rounding is acceptable. The EPA direction on the number of significant figures to be used in comparing ambient air quality concentrations with the NAAQS is presented in the “Guideline for the Interpretation of Ozone Air Quality Standards” (EPA-450/4-79-003). Page 6 states...”the level of the standard is taken as defining the number of significant figures to be used in comparisons with the standard. For example, a standard level of 0.12 ppm means that measurements are to be rounded to two decimal places (0.005 rounds up), and therefore, 0.125 ppm is the smallest concentration value in excess of the level of the standard”. The EPA Guideline answers the commentors’ concerns and has been used by the Agency, states, local agencies, etc. involved in attainment determination. The use of 120 ppb versus 124 ppb in the modeling attainment test is addressed in the EPA 1996 modeling guidance, “Guidance on Use of Modeled Results to Demonstrate Attainment of the Ozone NAAQS.” The modeled attainment test based on the July 1991 guidance, “Guideline for Regulatory Application of the Urban Airshed Model,” required the daily maximum predicted ozone concentration to be 120 ppb or less in all surface grid cells for all selected primary episode days. This threshold is not used in the 1996 guidance because the tests may result in the development of controls beyond those necessary to pass the monitored test. The 1996 guidance more closely replicates the monitored test by considering the severity of selected modeling episodes more explicitly and allowing modeled exceedances on severe days which are unusually conducive to high ozone formation or transport.

**Comment:** Comments were raised on the adequacy of a 2004 attainment strategy submitted in the July 2001 SIP which is not, but should be, based on a modeled

demonstration for 2004. The errors and deficiencies in the original submission are compounded by making significant assumptions used to estimate motor vehicle emissions. New modeling needed to confirm the effects of those changes on estimated emissions and air quality in the region. No new modeling was submitted in the July 2001 SIP revisions.

**Response:** The Atlanta 1-hour ozone attainment demonstration is based on photochemical grid modeling and weight of evidence analyses as recommended in the EPA's guidance for the 1-hour ozone attainment demonstration. Georgia submitted an attainment modeling demonstration supporting the attainment date extension to 2003 for the Atlanta 13-county nonattainment area to achieve the 1-hour ozone NAAQS to EPA on October 28, 1999. EPA proposed to approve the attainment demonstration and an attainment date extension request on the December 16, 1999, in the Federal Register (see 64 FR 70478). The photochemical grid ozone modeling performed for the Atlanta 1-hour ozone nonattainment area is based on an emissions projection to 2003, the attainment extension year that the Georgia Environmental Protection Division (Georgia EPD) requested of EPA in its October 28, 1999, submittal. On December 16, 1999, EPA proposed approval of the 2003 attainment strategy developed with photochemical grid modeling and the supporting weight of evidence (WOE) analyses. EPA does not agree that errors and deficiencies exist in the 2003-based photochemical modeling to affect its approvability for demonstrating attainment of the 1-hour ozone NAAQS. Detailed information on the 2003 Atlanta attainment photochemical modeling demonstration, the supplemental WOE analysis and EPA modeling requirements are contained in the Technical Support Document for the December 16, 1999, proposal (64 FR 70478). The 2003 modeled control strategy simulations indicate that ozone levels in the Atlanta area will be significantly reduced when the identified additional controls are implemented.

Subsequent to the State's October 1999 submission and EPA's December 1999 proposed approval of the Atlanta attainment demonstration, the source compliance date under the NO<sub>x</sub> SIP Call rule was extended from May 1, 2003 to May 31, 2004. In May 1999, the Court of Appeals for the District of Columbia Circuit stayed the obligation of states to submit SIPs in response to EPA's NO<sub>x</sub> SIP Call rule, pending litigation over the rule. In March 2000, the Court issued an opinion largely upholding the SIP Call rule. In later rulings in the summer of 2000, the Court lifted the stay of the SIP submission obligation, but provided that since SIP submissions were delayed, EPA could not mandate that states require sources to comply with state-adopted rules under the SIP Call earlier than May 31, 2004. Because the source compliance date under the SIP Call was delayed, Georgia determined that it could not attain in the year preceding the source-compliance date under the SIP and submitted a revised SIP requesting an attainment date of November 2004.

The revised attainment demonstration submitted by the State on July 17, 2001, relies on the photochemical grid modeling that was submitted in October 1999, but provides additional analysis. The photochemical grid modeling demonstration assumed an attainment year of 2003. The time and resources to redo the modeling for 2004 were not

available. Allowing additional time to redo the modeling for 2004 would not be consistent with the CAA intent that areas come into attainment as expeditiously as practicable nor would it significantly advance the technical basis for the attainment demonstration. Therefore, EPA agreed that attainment for 2004 could be demonstrated with the submittal of a 2004 emissions inventory as a supplement to the 2003 demonstration, provided that the 2004 emissions are less than or equal to the level of emissions used in the modeling. It could then be concluded that if emissions for 2004 were modeled, the predicted concentrations of ozone would be less than or equal to the 2003 1-hour ozone concentrations modeled. If increases in the 2004 emissions were indicated, the supplemental WOE analysis would have to demonstrate why the increase in emissions would not produce an increase in ozone concentrations. Although a 2004 attainment year is being proposed for approval for the Atlanta nonattainment area because of the upwind contribution, the local controls in the attainment strategy will all be implemented no later than May 2003.

The 2004 demonstration is based on the following procedures. First, the State uses information from the photochemical grid modeling and ambient air modeling to assess whether or not additional levels of emission reductions are needed beyond those that were necessary to demonstrate attainment. This assessment was completed using the emissions projections for 2004. The second part of the analysis involves an assessment of the levels of attainment emissions for 2004 and whether or not attainment in 2004 is reasonably likely to occur. A determination was made that if the estimates of the projected 2004 emissions with controls implemented are at or below the 2003 modeled levels then attainment by 2004 is reasonably likely to occur.

A comparison of the 2003 and 2004 modeling inventories indicate that NO<sub>x</sub> emissions increase about 2 percent over the modeling domain, while VOC emissions decrease over 8 percent. Since the total NO<sub>x</sub> emissions projected for 2004 are more than the levels modeled for 2003, a demonstration was needed to show why this would not adversely affect the ability of the area to attain the 1-hour ozone NAAQS by 2004. We believe that the relationship between VOC emission reductions and ozone concentration reductions and between NO<sub>x</sub> emission reductions and ozone concentration reductions can be determined using the photochemical modeling results. Sensitivity analyses from the photochemical modeling in the fine grid were used to develop a relationship to assess the potential for increases in ozone formation for the emission levels projected for 2004. The majority of the local emissions reductions for the attainment strategy occur within the 4-km fine grid with the exception of two power plants near the southern boundary. The sensitivity simulations used were based on the three episode days (i.e., July 31, 1987; August 1, 1987; and July 8, 1988) that were used in the 2003 control strategy simulations. These sensitivity simulations represented modeling scenarios based on reductions across emission inventory categories (e.g., low-level source or elevated sources) while holding all other emissions source categories constant. The air-quality-to-emission-change ratio (i.e., tons per day of emissions change per ppb change in ozone) was developed for each day and sensitivity simulation. The average of these ratios over all days and sensitivities

was then determined for each pollutant for each episode day.

The submitted ratios indicate that a 41.5 TPD increase in NO<sub>x</sub> is needed to cause a 1.0 ppb increase in ozone or a 164.9 TPD increase in VOC is needed to cause a 1.0 ppb increase in ozone. These relationships were applied to the emissions changes predicted between 2003 and 2004 as presented in Table 1. The tables indicate that NO<sub>x</sub> emissions are expected to increase by 12.9 TPD and VOC emissions will decrease by 43.7 TPD in 2004. The NO<sub>x</sub> and VOC ratios were applied to the emission changes between 2003 and 2004 to determine how ozone formation would be affected in 2004. This analysis indicated that a 0.3 ppb increase in ozone from the increase in NO<sub>x</sub> emissions is offset by the a 0.3 ppb decrease in ozone from the VOC emissions. The identified shortfall gap has thus been met by the State and the necessary control measures approved by EPA. Therefore, the assessment supports the conclusion that the area will attain the NAAQS in 2004.

**Comment:** The weight of evidence (WOE) approach does not satisfy the CAA's mandate to assure attainment as expeditiously as practicable, and no later than the statutory deadline. Nor does it comply with the Act's explicit requirements for a modeled attainment demonstration. Section 182(c)(2)(A) of the Act requires that the attainment demonstration "must be based on photochemical grid modeling or any other analytical method determined by the Administrator, in the Administrator's discretion, to be at least as effective." The commentors added several criticisms of various technical aspects of the weight of evidence approach, including certain specific applications of the approach to particular attainment demonstrations. This comment was incorporated by reference and is stated in detail in the February 14, 2000, Robert Yuhnke letter. These concerns are discussed in the national response that EPA developed on weight of evidence comments from the 1-hour ozone proposal notices on December 1999 and is provided in the response below.

**Response:** Under section 182(c)(2) and (d) of the CAA, serious and severe ozone nonattainment areas were required to submit by November 15, 1994, demonstrations of how they would attain the 1-hour standard. Section 182(c)(2)(A) provides that "[t]his attainment demonstration must be based on photochemical grid modeling or any other analytical method determined by the Administrator, in the Administrator's discretion, to be at least as effective." As described in more detail below, the EPA allows states to supplement their photochemical modeling results, with additional evidence designed to account for uncertainties in the photochemical modeling, to demonstrate attainment. This approach is consistent with the requirement of section 182(c)(2)(A) that the attainment demonstration be based on photochemical grid modeling, because the modeling results constitute the principal component of EPA's analysis, with supplemental information designed to account for uncertainties in the model. This interpretation and application of the photochemical modeling requirement of section 182(c)(2)(A) finds further justification in the broad deference Congress granted EPA to develop appropriate methods for determining attainment, as indicated in the last phrase of section

182(c)(2)(A).

The flexibility granted to EPA under section 182(c)(2)(A) is reflected in the regulations EPA promulgated for modeled attainment demonstrations. These regulations provide, “The adequacy of a control strategy shall be demonstrated by means of applicable air quality models, data bases, and other requirements specified in [40 CFR part 51 Appendix W] (Guideline on Air Quality Models).” 40 CFR 51.112(a)(1). However, the regulations further provide, “Where an air quality model specified in appendix W...is inappropriate, the model may be modified or another model substituted [with approval by EPA, and after] notice and opportunity for public comment....” Appendix W, in turn, provides that, “The Urban Airshed Model (UAM) is recommended for photochemical or reactive pollutant modeling applications involving entire urban areas,” but further refers to EPA’s modeling guidance for data requirements and procedures for operating the model. 40 CFR 51 App. W section 6.2.1.a. The modeling guidance discusses the data requirements and operating procedures, as well as interpretation of model results as they relate to the attainment demonstration. This provision references guidance published in 1991, but EPA envisioned the guidance would change as we gained experience with model applications, which is why the guidance is referenced, but does not appear, in Appendix W. With updates in 1996 and 1999, the evolution of EPA’s guidance has led us to use both the photochemical grid model, and additional analytical methods approved by EPA.

The modeled attainment test compares model predicted 1-hour daily maximum ozone concentrations in all grid cells for the attainment year to the level of the NAAQS. The results may be interpreted through either of two modeled attainment or exceedance tests: a deterministic test or a statistical test. Under the deterministic test, a predicted concentration above 0.124 parts per million (ppm) ozone indicates that the area is expected to exceed the standard in the attainment year and a prediction at or below 0.124 ppm indicates that the area is expected to *not* exceed the standard. Under the statistical test, attainment is demonstrated when all predicted (i.e., modeled) 1-hour ozone concentrations inside the modeling domain are at, or below, an acceptable upper limit above the NAAQS permitted under certain conditions (depending on the severity of the episode modeled).

In 1996, EPA issued guidance ( “Guidance for Improving Weight of Evidence Through Identification of Additional Emission Reductions, Not Modeled.” U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Emissions, Monitoring, and Analysis Division, Air Quality Modeling Group, Research Triangle Park, NC 27711. November 1999. Web site: GOTOBUTTON BM\_1\_ <http://www.epa.gov/ttn/scram/> See file ADDWOE1H), to update the 1991 guidance referenced in 40 CFR 50 App. W, to make the modeled attainment test more closely reflect the form of the NAAQS (i.e., the statistical test described above), to consider the area’s ozone design value and the meteorological conditions accompanying observed exceedances, and to allow

consideration of other evidence to address uncertainties in the modeling databases and application. When the modeling does not conclusively demonstrate attainment, EPA has concluded that additional analyses may be presented to help determine whether the area will attain the standard. As with other predictive tools, there are inherent uncertainties associated with air quality modeling and its results. The inherent imprecision of the model means that it may be inappropriate to view the specific numerical result of the model as the only determinant of whether the SIP controls are likely to lead to attainment. The EPA's guidance recognizes these limitations, and provides a means for considering other evidence to help assess whether attainment of the NAAQS is likely to be achieved. The process by which this is done is called a weight of evidence (WOE) determination. Under a WOE determination, the state can rely on, and EPA will consider in addition to the results of the modeled attainment test, other factors such as other modeled output (e.g., changes in the predicted frequency and pervasiveness of 1-hour ozone NAAQS exceedances, and predicted change in the ozone design value); actual observed air quality trends (i.e. analyses of monitored air quality data); estimated emissions trends; and the responsiveness of the model predictions to further controls. In 1999, EPA issued additional guidance<sup>4</sup> that makes further use of model results for base case and future emission estimates to predict a future design value. This guidance describes the use of an additional component of the WOE determination, which requires, under certain circumstances, additional emission reductions that are or will be approved into the SIP, but that were not included in the modeling analysis, that will further reduce the modeled design value. An area is considered to monitor attainment if each monitor site has air quality observed ozone design values (4<sup>th</sup> highest daily maximum ozone using the three most recent consecutive years of data) at or below the level of the standard. Therefore, it is appropriate for EPA, when making a determination that a control strategy will provide for attainment, to determine whether or not the model predicted future design value is expected to be at or below the level of the standard. Since the form of the 1-hour NAAQS allows exceedances, it did not seem appropriate for EPA to require the test for attainment to be "no exceedances" in the future model predictions. The method outlined in EPA's 1999 guidance uses the highest measured design value from all sites in the nonattainment area for each of three years.<sup>5</sup> The three year "design value" represents the air quality observed during the time period used to predict ozone for the base emissions. This is appropriate because the model is predicting the change in ozone from the base period to the future attainment date. The three yearly design values (highest across the area) are averaged to account for annual fluctuations in meteorology. The result is an estimate of an area's base year design value. The base year design value is multiplied by a ratio of the peak model predicted ozone concentrations in the attainment year (i.e., average of daily maximum concentrations from all days modeled) to the peak model predicted ozone concentrations in the base year (i.e., average of daily maximum concentrations from all days modeled). The result is an attainment year design value based on the relative change in peak model predicted ozone concentrations from the base year to the attainment year. Modeling results also show that emission control strategies designed to reduce areas of peak ozone concentrations generally result in similar ozone reductions in all core areas of the modeling domain, thereby providing some assurance of

attainment at all monitors.

In the event that the attainment year design value is above the standard, the 1999 guidance provides a method for identifying additional emission reductions, not modeled, which at a minimum provide an estimated attainment year design value at the level of the standard. This step uses a locally derived factor which assumes a linear relationship between ozone and the precursors. Although a commenter criticized this technique for estimating ambient improvement because it does not incorporate complete modeling of the additional emissions reductions, the regulations do not mandate or nor does EPA guidance suggest that States must model all control measures being implemented. Moreover, a component of this technique - the estimation of future design value, should be considered a model predicted estimate. Therefore, results from this technique are an extension of “photochemical grid” modeling and are consistent with Section 182(c)(2)(A). Also, a commenter believes EPA has not provided sufficient opportunity to evaluate the calculations used to estimate additional emission reductions. EPA provided a full 60-day period for comment on all aspects of the proposed rule. EPA has received several comments on the technical aspects of the approach and the results of its application, as discussed above and in the responses to the individual SIP’s.

Commenter states, application of the method of attainment analysis in the December 16, 1999 guidance will yield a lower control estimate than if we relied entirely on reducing maximum predictions in every grid cell to less than or equal to 124 ppb on every modeled day. However, this approach may overestimate needed controls (e.g., the form of the standard allows up to 3 exceedances in 3 years in every grid cell; and if the model over predicts observed concentrations, predicted controls may also be overestimated, etc.). In recognition of this EPA has considered other evidence to make these determinations, as described above through the weight of evidence determination.

When reviewing a SIP, the EPA must make a reasonable determination that the control measures adopted more likely than not will lead to attainment. Under the WOE determination, EPA has made these determinations based on all of the information presented by the states and available to EPA. The information considered includes model results for the majority of the control measures. Though all measures were not modeled, EPA reviewed the model’s response to changes in emissions as well as observed air quality changes to evaluate the impact of a few additional measures, not modeled. EPA’s decision was further strengthened by each State’s commitment to check progress towards attainment in 2003 and to adopt additional measures, if the anticipated progress is not being made.

A commenter further criticized EPA’s technique for estimating the ambient impact of additional emissions reductions not modeled on grounds that EPA employed a rollback modeling technique that, according to the commenter, is precluded under EPA regulations. The commenter explained that 40 CFR 51 App. W section 6.2.1.e. provides, “Proportional (rollback/forward) modeling is not an acceptable procedure for evaluating

ozone control strategies.” Section 14.0 of appendix W defines “rollback” as “a simple model that assumes that if emissions from each source affecting a given receptor are decreased by the same percentage, ambient air quality concentrations decrease proportionately.” Under this approach if 20% improvement in ozone is needed for the area to reach attainment, it is assumed a 20% reduction in VOC would be required. There was no approach for identifying NOx reductions. The “proportional rollback” approach is a purely empirically/mathematically derived relationship, and is not what EPA did. The prohibition in Appendix W applies to the use of a rollback method which is empirically/mathematically derived and independent of model estimates or observed air quality and emissions changes as the sole method for evaluating control strategies. For the demonstrations under proposal, EPA used a locally derived (as determined by the model and/or observed changes in air quality) ratio of change in emissions to change in ozone to estimate additional emission reductions to achieve an additional increment of ambient improvement in ozone. This did assume a linear relationship between the precursors and ozone for a small amount of ozone improvement. EPA has generally relied on photochemical modeling to evaluate the attainment demonstrations and their control strategies, and has used locally derived adjustment factors as a component to estimate the extent to which additional emissions reductions -- not the core control strategies -- would reduce ozone levels and thereby strengthen the weight of evidence test. This limited use of adjustment factors is more technically sound than the unacceptable use of proportional rollback. The limited use of adjustment factors is more practical in light of the uncertainty in the modeling; the resources and time required to perform additional modeling; and the requirement that areas perform a progress check by the end of 2003.

Contrary to concerns expressed by a commenter, EPA did not err by modifying the modeling requirements without first proposing to do so. Section 3.0 of appendix W states, “It should not be construed that the preferred models identified here are the only models available for relating emissions to air quality.” Section 3.2.2 of Appendix W further provides that the “determination of acceptability of a model is a Regional Office responsibility. Where the Regional Administrator finds that an alternative model is more appropriate than a preferred model, that model may be used subject to the recommendations in appendix W. This finding will normally result from a determination that (1) a preferred air quality model is not appropriate for the particular application; or (2) a more appropriate model or analytical procedure is available and is applicable.” Therefore, EPA does have the discretion to identify a more appropriate analytical procedure without undergoing rulemaking on updates to Appendix W. Also, as discussed above, by reference to the modeling guidance, Appendix W was designed to allow changes in the predictive tools and data bases without undergoing additional rulemaking. In any event, the EPA is taking comment during the SIP rulemaking process on the application of its guidance.

A commenter also expressed concern than EPA applied unacceptably broad discretion in fashioning and applying the WOE determinations. EPA disagrees. The WOE

determinations are made on a case-by-case basis. EPA has approved attainment demonstrations based on WOE determinations, generally with a requirement for additional reductions not modeled, only when the photochemical modeling provides a basis for believing that the SIP controls will achieve substantial ozone reductions, if not attainment levels. The fact that the WOE factors are incremental and differ between demonstrations, leads EPA to conclude these determinations may be made on a case-by-case basis, without hard-and-fast guidelines. Moreover, EPA believes that the WOE approach is bounded by the strength of the various factors that may be applied. The commenter added, as an example, EPA's application of the WOE approach to the Washington, D.C. attainment demonstration where modeling showing an ozone level (as adjusted) of 142 ppb was compared to the acceptable upper limit of 137 ppb. The commenter observed that EPA adjusted the modeled prediction on average by a factor of 19% to account for model over prediction, and stated that such an adjustment was not appropriate. In EPA's view, the 19% over prediction that underlies the 142 ppb level is only a rough approximation of the extent of modeling uncertainty. In EPA's view, consideration of model performance (specifically, a bias to under- or over-predict ozone levels) is one way to assess modeling uncertainty. To further address uncertainty, EPA applied the 1999 guidance to estimate the future design, in the same manner as applied to all of the other attainment demonstrations received. Both the assessment of model performance and the estimated future design value were used in the WOE determination.

The commenter also complained that EPA has applied the WOE determinations to adjust modeling results only when those results indicate nonattainment, and not when they indicate attainment. WOE is not used to adjust model results. WOE is additional analysis that is reviewed when there is reason to question the attainment demonstration. For the current demonstrations under proposal, EPA's decision to approve the demonstrations relied not only on the modeling, but other WOE, as well. For example, EPA considered current air quality, model performance (over- as well as under-prediction), number of episode days, model predicted future design values, and results from the regional modeling for the NO<sub>x</sub> SIP call, where applicable. For a given attainment demonstration any one of these elements could have indicated the area may not attain. But collectively the information supported EPA's decision. EPA has applied WOE determinations to all of the current demonstrations under proposal, although except for the Chicago and Milwaukee attainment demonstrations, the modeling results submitted do not pass the recommended "modeled attainment test." Reference the individual proposals for how WOE was applied in each case. These determinations were made based on EPA's best understanding of the problem and relied on a qualitative assessment as well as quantitative assessments of the available information. In some cases, EPA believed the demonstration of attainment was not conclusive, and in these cases EPA made the determination that additional emission reductions were needed to strengthen the demonstration.

The commenter further criticized EPA's application of the WOE determination on grounds that EPA ignores evidence indicating that continued nonattainment is likely, such

as, according to the commenter, monitoring data indicate that ozone levels in many cities during 1999 continue to exceed the NAAQS by margins as wide or wider than those predicted by the UAM model. EPA did consider the monitoring data along with other information in these determinations. When reviewing the monitoring data, EPA considered other factors. For example, high monitoring values may have occurred for many reasons including, fluctuations due to changes in meteorology and lack of emission reductions. The 1999 monitor values do not reflect several control programs, both local and the regional which are scheduled for implementation in the next several years. And the 1999 meteorology in the Northeast was such that July 1999 was one of the warmest (ranked 9th) ever experienced since 1895.<sup>7</sup> In addition to the heat, the middle and southern portions of the Northeast were also drier than average during this month. This information supports EPA's belief that the high exceedances observed in 1999 are not likely to reoccur frequent enough to cause a violation, once the controls adopted in these SIP's are implemented. There is little evidence to support the statement that ozone levels in many cities during 1999 continue to exceed the NAAQS by margins as wide or wider than those predicted by the UAM. Since areas did not model 1999 ozone levels using 1999 meteorology and 1999 emissions which reflect reductions anticipated by control measures, that are or will be approved into the SIP, there is no way to determine how the UAM predictions for 1999 compare to the 1999 air quality. Therefore, we can not determine whether or not the monitor values exceed the NAAQS by a wider margin than the UAM predictions for 1999. In summary, there is little evidence to support the conclusion that high exceedances in 1999 will continue to occur after adopted control measures are implemented.

In addition, the commenter argued that in applying the WOE determinations, EPA ignored factors showing that the SIPs under-predict future emissions, and the commenter included as examples certain mobile source emissions sub-inventories. EPA did not ignore possible under-prediction in mobile emissions. EPA is presently evaluating mobile source emissions data as part of an effort to update the computer model for estimating mobile source emissions. EPA is considering various changes to the model, and is not prepared to conclude at this time that the net effect of all these various changes would be to increase or decrease emissions estimates. For attainment demonstration SIPs that rely on the Tier 2/Sulfur program for attainment or otherwise (i.e., reflect these programs in their motor vehicle emissions budgets), States have committed to revise their motor vehicle emissions budgets after the MOBILE6 model is released. EPA will work with States on a case-by-case basis if the new emission estimates raise issues about the sufficiency of the attainment demonstration. Corrections, if needed, will be made in time for the progress check in 2003 and if the analysis indicates additional measures are needed, EPA will take the appropriate action.

## **V. Vehicle Registration**

**Comment:** Not using MOBILE Model default values for vehicle fleet composition is inconsistent with Law, and is arbitrary and capricious. The motor vehicle emissions

budgets submitted in the July 2001 SIP revision are deficient for numerous reasons. First, commentors state that the revised attainment demonstration and the motor vehicle emission budgets rely upon different estimates of speeds and vehicle fleet composition that strongly influence estimated motor vehicle emissions in the nonattainment area. The revised SIP indicates that the use of corrected speed increases regional motor vehicle emissions by approximately 22 tons/day over the emissions in the 1999 SIP revision. The commenter believes this revision in estimated speeds probably continues to underestimate actual emissions either because the speeds are underestimated or emissions from higher speeds are not accounted for.

At the same time, Georgia has revised the percentages of various vehicle types, resulting in reduced estimates of higher-emitting sports utility vehicles and increased estimates of vehicles subject to light duty gasoline vehicle standards. The effect of these revised vehicle classifications is approximately a reduction in NO<sub>x</sub> emissions comparable to the increase in emissions resulting from the corrected speed estimates. The change in fleet composition results from a vehicle identification number (VIN) decoding system that attempts to allocate registered vehicles in the nonattainment area to various vehicle classifications. The report relied upon by the state to make these revised estimates states “the VIN decoder indicated an error rate of 6.5%.” “Vehicle Registration Records Analysis and Model Year Distribution Report,” (GIT, August 3, 2000), p.7. The sources of error suggest that the error in classification tends to mis-assign vehicles to lower emitting classes. In the absence of compelling analysis to show that the MOBILE Model assumptions are less valid, the statutory presumption in favor of the MOBILE Model assumptions should prevail.

**Response:** EPA disagrees. EPA concludes that this 2000 speed and 1999 vehicle registrations data is accurate and is the most recently available data and therefore must be used for purposes of developing the SIP and the budgets. With regard to the speed data, a speed study was conducted in the fall of 2000, in response to concerns raised by the commentors on the October 1999 SIP submittal and Regional Long Range Transportation Plan (LRTP), that the speeds on which the mobile emissions modeling for the SIP and LRTP was based were too low. In early 2001, a data analysis team was formed to analyze the data from this study and provided recommendations to update vehicle speed information and highway mobile source emissions estimates in Atlanta. For a summary of the approach used by this team, see “Development of Vehicle Speed Parameters for Atlanta Non-Attainment Area Emissions Post-Processor Used in 2004 State Implementation Plan elsewhere in Appendix XXXI ([http://www.dnr.state.ga.us/dnr/environ/plans\\_files/plans/Speed\\_Study.pdf](http://www.dnr.state.ga.us/dnr/environ/plans_files/plans/Speed_Study.pdf)). The analysis team’s recommendations were incorporated into a revised version of Atlanta Regional Commissions emissions post-processor, used to calculate emissions from every link in the highway networks in the travel demand model.

With regard to the vehicle registration data, the EPA MOBILE5 users guide encourages the use of local registration distributions by age that are specific to the area being

modeled. Using locality specific data will generally enhance the accuracy of the modeled emissions factors. The MOBILE5 defaults were developed using 1990 registration data which is now out of date for Atlanta. EPA guidance supports the development of local registration data for emissions modeling, and all modeling must use most recently available data. (see User's Guide to MOBILE5, U.S. EPA, September 1996, Section 2.2.3, p. 2-27, <http://www.epa.gov/oms/models/mobile5/mob5buse.pdf>; and Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources, U.S. EPA, 1992, Section 3.3.2.2, p. 16, <http://www.epa.gov/otaq/invntory/r92009.pdf>).

Georgia has available, valid local 1999 vehicle registration data, therefore the local data must be used for both transportation conformity and SIP purposes, including the development of budgets for transportation conformity purposes. EPA does not agree that 1990 MOBILE5 defaults are preferable to Georgia's 1999 local registration data. EPA concludes that this data is still valid and is consistent with EPA guidance referenced above.

Georgia had a new vehicle age distribution extracted from the 1999 vehicle registration database received from the Georgia Department of Revenue, Division of Motor Vehicles. The extraction involved designating vehicles in the registration data to MOBILE5b vehicle classifications using weight, fuel, and general vehicle type. These vehicle characteristics were derived in part by decoding the VIN noted in the registration database. In a report prepared by Georgia Tech on behalf of Georgia EPD, it is noted that the 6.5 % error rate is somewhat misleading in that many vehicles with VIN errors were retained and used in the model year distributions. For example, a vehicle may decode with errors in several fields, but include information on vehicle type and fuel that enable it to be categorized. Georgia Tech re-examined 6.5% of the 3.5 million vehicles where the VIN decoder indicated an error (a total of 227,500 vehicles). Researchers had sufficient information from the VIN decoder to identify that 73% of the errors (a total of 166,075 vehicles) as light duty trucks and 4% (a total of 9,100 vehicles) as cars. For the remaining 23% of the errors (a total of 52,325 vehicles), not enough information was available to either categorize them. Therefore, no data was available for only 1.5% of the fleet. This is a very small fraction of the entire vehicle population. Moreover, an analysis showed that the age distributions of the excluded light duty trucks (73% of the excluded vehicles) and the included light duty trucks (from the 3.5 million vehicles), very closely matched each other. The analysis also showed that the excluded vehicles were distributed throughout model years 1975 through 1999. Therefore, EPA concludes that notwithstanding this minor error in the 1999 registration data, it is the best data available and should be used. (For more details of the analysis summarized above, see Response to Comments on Vehicle Registration Records Analysis, contained in the file available here:

[http://www.dnr.state.ga.us/dnr/enviro/plans\\_files/plans/Registration\\_Distribution\\_comments.pdf](http://www.dnr.state.ga.us/dnr/enviro/plans_files/plans/Registration_Distribution_comments.pdf)

EPA concludes that this 1999 data is accurate and is the most recently available data and

therefore must be used for purposes of developing the SIP and the MVEB. In addition, EPA's conformity rule require the use of latest planning assumptions for the development of SIPs and conformity analysis. A joint United States Department of Transportation (DOT) and EPA policy memorandum was issued on January 18, 2001 which states that if local data is not currently available and cannot be reasonably be made available, areas may rely on the national defaults related to vehicle registration data in the latest EPA-approved MOBILE Model. (see Use of Latest Planning Assumptions in Conformity Determinations, <http://www.epa.gov/otaq/transp/conform/confasum.pdf>). Georgia has available valid local 1999 vehicle registration data, therefore the local data must be used for both transportation conformity and SIP purposes, including the development of a SIP motor vehicle emissions budget for transportation conformity purposes. EPA does not recommend reverting back to 1990 MOBILE5 defaults in place of Georgia's 1999 local registration data. As explained above, EPA concludes that this data is still valid, despite the margin of error and is consistent with EPA guidance referenced above.

## VI. PSG

**Comment:** The emission reduction benefit claimed for the Partnership for Smog Free Georgia (PSG) program is under-estimated. The potential emission reduction benefit from this type of program could be much higher.

**Response:** While the potential reductions from the program may be greater when implemented in other areas, these reductions achieved by these programs are extremely sensitive to local area conditions (i.e., will people take transit even if its free?). Studies indicate that providing choices in modes of transportation will affect people's behavior. However, due to the uncertainty of commuters' behavior, the State elected to use a lower reduction estimate calculated consistent with EPA's guidance to be conservative. The issue of whether or not more emission reductions could result from this program is irrelevant. The State has determined that only a more conservative level of emissions results from this program and submitted the program for EPA approval assuming that level of implementation. EPA believes the program is approvable based on this level of implementation.

**Comment:** Atlanta should adopt a volume purchasing program.

**Response:** The major transit provider in Atlanta, MARTA, already has a bulk purchasing transit pass program in place. The PSG program, which is a part of the SIP, accounts for reduced vehicle traffic based in part from volume purchasing programs offered through MARTA. EPA cannot require the State to adopt additional volume purchasing programs or any of the other transportation control measures discussed below into the SIP unless it is necessary to meet the reasonably available control measure (RACM) requirement. A discussion of what RACM has been determined to be for Atlanta is in section IX of this response to comment document.

**Comment:** Georgia should expand the \$25 per year tax credit to provide a more serious incentive for employer investment in commuter incentive programs.

**Response:** Since 1997, the Federal Executive Board in Atlanta has sponsored the Clean Air Initiative. This is a regional initiative coordinated by the USEPA which addresses Federal employees' contribution to air quality. The Clean Air Initiative not only addresses commuter habits, but also addresses alternative fuel vehicles, energy management and green purchasing. The program effectiveness varies with congressional budget allocation for these programs for each agency because the Federal Executive Order only requires EPA, DOE and DOT to provide 100% subsidies for transit. However, EPA has long had a standing commitment to this effort and over 80% of its employees use non-single occupancy vehicles as a means to commute to work. This more extensive program is being gradually turned over to the Clean Air Initiative Program. The federal program is a voluntary program instituted through the Federal Executive Board. The State has determined that the state (PSG) strategy will meet the goals of the program, but they will evaluate the program annually to ensure that the performance targets are met. If the targets are not met, the State must consider a variety of strategies (which may or may not include increasing the tax incentive) to increase participation in the PSG program. Until this first evaluation of the program, EPA will allow the state to implement its current strategy.

**Comment:** Georgia should implement a minimum parking requirement program.

**Response:** Georgia is continuing to evaluate this option, but results of surveys completed indicate that this is not an effective tool for the Atlanta region. Further, since the PSG program is a comprehensive, multi-TCM, voluntary effort, each individual PSG member/company is free to use this program in lieu of offering other benefits. The PSG program uses information on capital cost savings and operating costs for parking in its outreach efforts to educate the public and PSG partners on the benefits of alternative transportation. EPA cannot require the State to adopt a minimum parking requirement program and put these in the SIP unless it is determined as necessary to meet the RACM requirement. A discussion of what RACM has been determined to be for Atlanta is in section IX of this response to comment document.

**Comments:** The 2001 SIP revision documentation does not appear to contain comparable ozone air quality tracking data for the 2000 ozone season.

**Response:** In 1999, the PSG program shifted its emphasis from an episodic program to a seasonal and annual program because of feedback from various partners. The current program being approved under the attainment SIP expects to achieve results on a seasonal basis. The ozone forecasting is for health advisory purposes and public awareness only and is not required in order for the SIP to be approved.

## VII. Transportation Plan

**Comment:** Several commentors suggested that the transportation plan should include certain types of specific projects.

**Response:** The attainment SIP process has no authority, nor do the conformity regulations, to require locals to adopt certain project specific programs as part of a transportation plan. The transportation planning provisions at 23 CFR, FHWA recognize that planning and decisions on project types is a local/regional decision, not a federal decision. The plan as a whole must comply with conformity and not interfere with attainment. Moreover, this comment period concerns only the SIP motor vehicle emissions budget adequacy determination for conformity purposes. Comments regarding the composition of the transportation plan are not appropriate as they do not reflect upon the adequacy of the motor vehicle emissions budgets. Comments regarding the composition of the transportation plan can and should be raised as part of the public involvement process provided by the MPO in the development of its transportation plan/program and projects.

## VII. RACM

**Comment:** Comments were submitted, stating that the SIP does not include all reasonable measures (i.e., those in the Transportation Plan), which would result in a lower motor vehicle emissions budget; not all RACM available was considered and implemented as part of the SIP (i.e., value probing type measures).

**Response:** Georgia EPD performed a RACM analysis for potential control of NO<sub>x</sub> and VOC emission sources not included in the attainment demonstration for the Atlanta 1-hour ozone nonattainment area. Most of the controls identified in the RACM analysis were included in a study completed by Georgia State University ("The Direct Costs of Controlling NO<sub>x</sub> and VOC emissions in Atlanta." Georgia State University. Atlanta, Georgia: November 1, 1997, pp. 43-65). In the Georgia State Report, the 1990 NO<sub>x</sub> and VOC emissions inventory data were updated using growth factors to reflect emissions in 1999. Georgia EPD multiplied the percent reduction expected from a particular control measure from the study by a 2003 base level of emissions in order to calculate 2003 reductions for VOC and NO<sub>x</sub>. The 2003 base level was acquired from the 2003 Base Modeling run for the day of July 31. This method was applied to most of the calculations in the RACM analysis. For many of the remaining RACM calculations, GAEPD applied reduction factors from sources such as STAPPA/ALAPCO and EPA to emissions data derived from modeling runs for the Atlanta nonattainment area in order to get projected 2003 VOC and NO<sub>x</sub> reductions from a particular control measure. Other reductions were based on similar control measures enacted in other areas and the reduction results obtained in those areas. Georgia EPD performed a RACM analysis to determine if the 2004 attainment date could be advanced. They analyzed the 2003 season to determine if control measures could be implemented that were sufficient to

prevent 1-hour ozone NAAQS violations during the 2003 season and thus advance the attainment date.

Each control option was evaluated according to: 1) the State's authority to implement controls; 2) the amount of NO<sub>x</sub> reductions; 3) the amount of VOC reductions; 4) whether a similar control measure is already being implemented in the SIP; 5) the cost effectiveness of the control; 6) whether SIP credit has already been taken for the measure; and 7) whether the measure can be implemented to achieve reductions during the 2003 ozone season, (measures implemented after the 2003 ozone season cannot advance the 2004 attainment date). Any measures determined to be feasible to implement after the above described evaluation were grouped, by primary category, under the heading "remaining measures." Georgia used a cut-off of \$5,000 per ton in their analysis of whether a measure was cost effective. Georgia has used this threshold for over 12 years in developing their VOC and NO<sub>x</sub> RACT regulations. It was, therefore, used in the RACM analysis for consistency. EPA does not consider this cut-off valid for all areas and it may not be valid for Georgia in all areas. However, for the purpose of this RACM demonstration and considering consistency in developing other measures supporting this demonstration, EPA believes this cut-off is acceptable for Atlanta. The RACM analysis indicates that additional reductions of 18.66 TPD NO<sub>x</sub> and 51.76 TPD VOC are available for implementation by 2003 in the Atlanta 1-hour ozone nonattainment area. For the RACM analysis, the GAEPD had to demonstrate why these remaining reductions would not advance attainment for a 2003 attainment year prior to the regional NO<sub>x</sub> reductions expected from the EPA NO<sub>x</sub> SIP Call in 2004. To do this, GAEPD estimated the effect of the NO<sub>x</sub> SIP Call and the RACM reductions on ozone concentrations.

The SIP for bringing the Atlanta area into compliance with the 1-hour ozone NAAQS relies upon reductions from the NO<sub>x</sub> SIP Call implemented in upwind states. In order to advance the attainment date from November 15, 2004, and thereby be classified as RACM, a control measure or set of control measures would need to provide a greater effect, during the 2003 ozone season, on ozone reduction than the NO<sub>x</sub> SIP Call measures will provide in 2004. Appendix C, "1-Hour Upwind/Downwind Linkages" of The Air Quality Modeling Technical Support Document for the NO<sub>x</sub> SIP Call, September 23, 1998, lists Alabama, Kentucky, North Carolina, South Carolina, and Tennessee as significant contributors to Atlanta's ozone exceedances. Table 6 of EPA's Final 2007 Base NO<sub>x</sub> emission rates published in the Federal Register on March 2, 2000, (65 FR 11222) gives totals for these five states equal to 1,109,255 tons per season or 10,177 tons per day.

Not all of these emissions are transported into Georgia or the Atlanta area. Therefore, any meaningful comparison must be based on the NO<sub>x</sub> SIP Call's effect on ozone concentrations in Atlanta. Appendix G of the EPA NO<sub>x</sub> SIP TSD referenced above, "Evaluation of Contributions - Tables of Metrics, 1-Hour CAMX: Upwind States to Downwind States," page G-6, gives average contributions to an Atlanta area exceedance as follows: Alabama 8 percent; Kentucky, 1 percent; North Carolina, 1 percent; South

Carolina, 1 percent; and Tennessee, 4 percent for a total contribution of 15 percent. The State calculated the effect on a monitored exceedance occurring at 125 ppb, the result being a contribution of 18.6 ppb (125 ppb x 15 percent) from upwind states. The implementation of the NO<sub>x</sub> SIP Call in 2004 would reduce the contribution to ozone exceedances in Atlanta by 18.6 ppb.

The effect the “remaining measures” would have on air quality if implemented during the 2003 ozone season is calculated by dividing the estimated NO<sub>x</sub> or VOC reduction amount times the change in pollutant per change in ozone. Using the factors developed in the air quality assessment to determine the change in ozone concentration from emissions reductions (i.e., 41.45 TPD NO<sub>x</sub> per 1 ppb ozone, 164.9 TPD VOC per 1 ppb ozone), the expected change in ozone concentration from the emissions reductions from the remaining measures in the RACM analysis (i.e., 18.66 TPD NO<sub>x</sub>, 51.71 TPD VOC) can be estimated. The procedure used to develop the NO<sub>x</sub> and VOC factors are discussed in the TSD. Taking the ratio of the factors and the remaining measures reductions would yield 0.45 ppb of ozone decreases from the NO<sub>x</sub> reductions and 0.31 ppb of ozone decreases from the VOC reductions. The total ozone reduction due to remaining measures would be 0.75 ppb of ozone. Hence, implementation of the remaining measures in 2003 from the RACM analysis is much less than would be needed to achieve attainment in 2003 without the much larger reductions from the NO<sub>x</sub> SIP Call that will be achieved in 2004. This analysis therefore demonstrates that no additional RACM measures are reasonably available for the Atlanta 1-hour ozone nonattainment area.

Approval of a RACM analysis must be done on a case-by-case basis and the approval for the Atlanta area is not intended to set precedent for any other area requiring a RACM analysis or for any other pollutant.

Although EPA does not believe that section 172(c)(1) requires implementation of additional measures for the Atlanta area, this conclusion is not necessarily valid for other areas. Thus, a determination of RACM is necessary on a case-by-case basis and will depend on the circumstances for the individual area. In addition, if in the future EPA moves forward to implement another ozone standard, this RACM analysis would not control what is RACM for these or any other areas for that other ozone standard.

Also, EPA has long advocated that states consider the kinds of control measures that the commentors have suggested, and EPA has indeed provided guidance on those measures. See, e.g., <http://www.epa.gov/otaq/transp.htm>. In order to demonstrate that they will attain the 1-hour ozone NAAQS as expeditiously as practicable, some areas may need to consider and adopt a number of measures—including the kind that GAEPD evaluated in its RACM analysis --that even collectively do not result in many emission reductions. Furthermore, EPA encourages areas to implement technically available and economically feasible measures to achieve emissions reductions in the short term—even if such measures do not advance the attainment date—since such measures will likely

improve air quality. Also, over time, emission control measures that may not be RACM now for an area may ultimately become feasible for the same area due to advances in control technology or more cost-effective implementation techniques. Thus, areas should continue to assess the state of control technology as they make progress toward attainment and consider new control technologies that may in fact result in more expeditious improvement in air quality.