

# Use of Latest Planning Assumptions in Conformity Determinations

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## MEMORANDUM:

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**To:** FHWA Division Administrators  
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**Subject:** Use of Latest Planning Assumptions in Conformity Determinations

The Environmental Protection Agency (EPA) and the U.S. Department of Transportation (DOT) are issuing this memorandum jointly to clarify our expectations for implementing the transportation conformity rule's requirements for use of latest planning assumptions in conformity determinations. This memorandum also reiterates EPA's expectations for using latest planning assumptions in the development of motor vehicle emissions budgets in State implementation plans (SIPs). This memorandum does not create new requirements; it simply clarifies existing requirements. During the development of this memorandum, EPA and DOT consulted with State departments of transportation, metropolitan planning organizations (MPOs), State and local air quality agencies, and other stakeholder groups. We have carefully considered and incorporated this stakeholder input into this guidance document.

## Summary of Guidance

Nonattainment and maintenance areas must use the most recent planning assumptions that are available in their conformity determinations. Areas are encouraged to review and update their planning assumptions regularly. Although these updates are not required by the transportation conformity rule, areas are strongly encouraged to review and strive towards regular 5-year updates of planning assumptions, especially population, employment, and vehicle registration assumptions. Areas with network-based travel models should review their assumptions and data used in model validation through the consultation process, and newer assumptions and data must be used whenever available. Conformity determinations must be based upon the most recent planning assumptions in force at the time of the determination. Conformity determinations that are based on assumptions that are older than 5 years should include written justification for not using more recent information. For areas where updates are appropriate, the conformity determination should include an anticipated schedule for updating assumptions. Air quality and transportation

agencies should use the consultation process to ensure that the latest available planning assumptions are used in conformity determinations and SIP development.

## **1. What are the conformity requirements for use of latest planning assumptions?**

All conformity determinations must be based upon the latest available planning assumptions in force at the time of the conformity determination. Section 176(c)(1)(B)(iii) of the Clean Air Act (CAA) states that "...[t]he determination of conformity shall be based on the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel, and congestion estimates as determined by the MPO or other agency authorized to make such estimates." The CAA requires that transportation investments be based on the most recent information that is available, in order to protect public health over the long-term.

The latest planning assumptions requirements apply to all assumptions used in demonstrating conformity, including assumptions that are used in transportation demand and emissions modeling. Examples of assumptions are land use, vehicle age and fleet mix, and the most recent information regarding the implementation of control measures in approved SIPs (e.g., inspection and maintenance (I/M) and fuels programs, transportation control measures). Specific latest planning requirements are outlined in 40 CFR 93.110 (b)-(f):

"Assumptions must be derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other agency authorized to make such estimates and approved by the MPO. The conformity determination must also be based on the latest assumptions about current and future background concentrations.

- c. The conformity determination for each transportation plan and TIP [transportation improvement program] must discuss how transit operating policies (including fares and service levels) and assumed transit ridership have changed since the previous conformity determination.
- d. The conformity determination must include reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time.
- e. The conformity determination must use the latest existing information regarding the effectiveness of the transportation control measures (TCMs) and other implementation plan measures which have already been implemented.
- f. Key assumptions shall be specified and included in the draft documents and supporting materials used for the interagency and public consultation required by '93.105."

EPA and DOT participate in the interagency consultation process to review and comment on assumptions, and the latest planning assumptions requirements must be met before DOT can make a conformity determination. State and local transportation and air quality agencies also participate in the consultation process.

As assumptions are expected to change over time, it is important that State, local, and Federal transportation and air quality planners evaluate on a regular basis existing assumptions and new information as it becomes available. We understand that State and local agencies need to prioritize these updates along with other planning needs. Although regularly scheduled updates are not required by the transportation conformity rule, areas are strongly encouraged to review current planning assumptions and strive towards regular 5-year updates of planning assumptions, especially for population, employment, and vehicle registration assumptions. Conformity determinations that are based on assumptions that are older than 5 years should include written justification for not using more recent information. See below for more details on when updates are particularly important.

## **2. What do we mean by "latest" planning assumptions?**

Using the "latest" assumptions means that the conformity determination is based on the most current information that is available to State and local planners (e.g., the MPO or other agency can obtain the information from another agency, the information is appropriate for the current conformity determination, the information is readily transferable for use in transportation and/or emissions modeling, etc.).

Latest planning assumptions must be derived from the population, employment, travel, and congestion estimates that have been most recently developed by the MPO (or other agency authorized to make such estimates), and approved by the MPO (40 CFR 93.110(b)). Once adopted, these estimates must be used for determining the latest planning assumptions. In areas using network-based travel models, scenarios of land development and use must be consistent with the future transportation system for which emissions are being estimated. The distribution of employment and residences for the transportation system must be reasonable (40 CFR 93.122(b)(1)(iii)).

The interagency consultation process must be used to determine which planning assumptions are considered the latest and best assumptions for conformity determinations. The 40 CFR 93.105(c)(1)(i) specifically requires that the interagency consultation process be used to evaluate and choose assumptions to be used in conformity analyses.

The consultation process should be used to evaluate assumptions for quality and accuracy as needed prior to use in conformity. The most recently available Highway Performance Monitoring System (HPMS) estimates of vehicle miles traveled (VMT) should be used whenever HPMS data is used in conformity analyses for current and future years. Historical trends and other factors should be considered as a primary source of information from which planning assumptions should be evaluated (e.g., population, employment). If assumptions are used that contradict historical trends, the conformity determination must include an explanation regarding why the assumptions are appropriate. This explanation should be included when the conformity determination is provided for public comment. The consultation process should not be used to unduly delay or exclude the use of new information or to selectively employ it for the convenience of the conformity process.

Areas that rely on the U.S. Census for certain planning assumptions should use the most recent estimates available from the Census Bureau. Areas that are using assumptions based on data collected through local or State surveys or other mechanisms should use the consultation process to determine whether older State or local data is more appropriate than the most recently available U.S. Census. Although the most recent U.S. Census was performed in 2000, the data may not be available until 2002.

## **3. When should planning assumptions be updated? What process should be used for updates?**

EPA and DOT encourage nonattainment and maintenance areas to make every effort to review and update their planning assumptions. This may be especially important in areas that are experiencing higher population and employment growth than is reflected in current planning assumptions. Areas with network-based travel models should also review their assumptions and data used in model validation through the consultation process, and newer assumptions and data must be used whenever available.

Planning assumptions should be reviewed through the interagency consultation process to determine whether they are adequate for conformity purposes. It is expected that the review of

latest planning assumptions will occur in conjunction with plan and TIP conformity determinations, which are required in metropolitan nonattainment and maintenance areas. The results of the review of the planning assumptions and consultation process should be documented in the conformity determination. The consultation process is also the forum for evaluating and choosing assumptions that are used in conformity determinations (40 CFR 93.105(c)(1)(i)) in isolated rural nonattainment and maintenance areas.

EPA and DOT should be proactively involved in the consultation process in all nonattainment and maintenance areas so that potential issues and problems can be identified and addressed early on in the conformity process. If it is determined through consultation that certain planning assumptions need to be updated, State and local transportation and air quality agencies should commit to a schedule to update the assumptions. Different schedules can be established for updating different assumptions. The level of resources dedicated to updating assumptions may vary depending upon planning priorities in a given area. See below for specific information regarding our expectations for vehicle registration assumptions.

Since emission estimates are sensitive to vehicle speed, EPA and DOT recommend that areas using network-based travel models compare the speeds estimated in the validation year with speeds empirically observed during the peak and off-peak periods. The significant sensitivity of emissions to highway speeds emphasizes the need to monitor and maintain the ability of the transportation model to provide accurate speed estimates. Nonattainment and maintenance areas using network-based travel models are encouraged to establish criteria for updating the observed speed data that are used to validate the speeds predicted by the transportation model. The criteria should identify the schedule on which speed data will be collected given the pace of growth in the urban area, the magnitude of changes to the highway system, and any fundamental changes in speed-related conditions such as the change in Federal law on speed limits.<sup>1</sup>

Although regular updates of assumptions are not required by the transportation conformity rule, areas are strongly encouraged to review current assumptions and strive towards regular 5-year updates of planning assumptions, especially for population, employment, and vehicle registration assumptions. We understand that State and local agencies need to prioritize these updates along with other planning needs. As assumptions are expected to change over time, it is important that State, local, and Federal transportation and air quality planners evaluate, on a regular basis, existing assumptions and new information as it becomes available. Conformity determinations that are based on information that is older than 5 years should include written justification for not using more recent information. For areas where updates are appropriate, the conformity determination should include an anticipated schedule for updating assumptions.

#### **4. What vehicle registration assumptions should be used in emissions modeling for conformity determinations? What process should be used to update these assumptions?**

Vehicle registration assumptions (i.e., vehicle registration by vehicle type and age) have changed significantly over the past decade in many nonattainment and maintenance areas. However, many areas have not kept this data current. It is critical for areas to use the consultation process to examine new data as it becomes available and consider whether the current data and assumptions are still appropriate for conformity purposes. It is especially important for areas to update assumptions if the characteristics of the fleet have significantly changed from the assumptions that are currently being used for conformity.

MPOs must use the most recent vehicle registration data that is available for conformity analyses. Air quality agencies typically review this data for SIP purposes. State and local transportation and air quality agencies should make an effort to obtain recent registration data files and should establish a schedule for updating local vehicle registration data on a regular

basis.

As a general rule, local data should be used whenever available. If local data is not currently available and cannot reasonably be made available for use in impending conformity determinations, areas may rely on the national defaults related to vehicle registration data in the latest EPA-approved motor vehicle emissions factor model. However, areas should explore whether more recent local vehicle registration data can be made available in a useable format for the next conformity determination. Once such data becomes available, it must be used in conformity analyses.

When MOBILE6 is released and used in conformity determinations, some areas will need to use the consultation process to decide whether older local data should be used instead of newer national defaults. If a State or local air agency has used more recent local vehicle registration data in a recently submitted SIP, that data will most likely be the latest assumptions for conformity. We expect that vehicle registration data used in a SIP has been quality-assured and is appropriate for conformity purposes unless newer data has since become available.

**5. If a state government or other agency collects vehicle registration data on a regular basis, should the most recent year of collected data be considered the "latest" planning assumptions for the current conformity determination?**

Yes, if that information is available for conformity purposes. However, most State governments collect information, such as vehicle registration data, on an annual basis for purposes other than conformity. This data includes information about vehicle age and fleet mix, for example, which are important inputs for emissions modeling. Although this information may be sufficient for some State government purposes not related to air quality (e.g., State tax or insurance purposes), the most recent year of collected raw data may not necessarily be the best information for use in the current conformity analyses. Of course, if the latest State-collected data has been quality-assured and is being used for emissions modeling, then it must also be used for conformity.

The consultation process should be used to determine whether the most recent State-collected vehicle registration data is available for conformity. State and local transportation and air quality agencies should consider whether the data are accurate and appropriate for air quality purposes, as well as whether the data are readily transferrable for use in emissions modeling for the specific nonattainment or maintenance area.

If the most recent State-collected data are not available for use in the current conformity determination, the consultation process should be used to determine whether such vehicle registration data should be reviewed and used for the next determination. The conformity determination should include an explanation of why recent State or local vehicle registration data was not considered "available" for conformity purposes, if concerns are raised during the consultation or public involvement processes. EPA and DOT do not intend that the consultation process be used to ignore data that could be quality-assured and/or formatted for emissions modeling purposes with minimal effort.

**6. What are the planning assumptions requirements for SIP development, and how do they relate to the conformity rule's requirements?**

Motor vehicle emissions budgets in SIPs must be based on the most current information available at the time that the SIP is developed. These assumptions, including VMT, socioeconomic variables, emissions modeling inputs (including vehicle registration by age and type) and other planning assumptions must be based on the latest information available at the

time that the SIP is developed and as consistent with EPA guidance on SIP inventories and the MOBILE Users' Guide.<sup>2</sup>

Serious and severe ozone nonattainment areas that are covered by two November 1999 memoranda<sup>3</sup> should also examine whether their current planning assumptions are appropriate for SIP purposes. Most of these areas are required to submit future SIP revisions to reflect additional adopted measures, and areas that relied on interim approximations of the benefits of the Tier 2 standards must revise motor vehicle emissions budgets when MOBILE6 is released. In these cases, it may be important for areas to establish a schedule for updating their vehicle registration data and other SIP assumptions prior to these future SIP revisions. At a minimum, MOBILE6's national defaults related to vehicle registration must be used in the MOBILE6 budget revisions, unless it is determined through the consultation process that more appropriate local data are available.

Transportation planners are encouraged to review and comment on motor vehicle emissions budgets as well as share more current assumptions with air quality agencies so that they can be included in the SIP. This is especially important since air quality and transportation agencies usually provide different types of planning assumptions to SIP and conformity processes. For example, transportation planners are more likely to have the latest VMT estimates for a given nonattainment or maintenance area while air agencies are more likely to have the latest available vehicle registration data. It is critical that transportation and air agencies exchange information on a regular basis so that the latest assumptions are used in SIP and conformity processes.

#### **7. What if the assumptions used in a submitted or approved SIP are not the most current and best information for conformity determinations?**

The latest planning assumptions must be used in conformity determinations, even if they differ from those used in the SIP. In many cases, the MPO may have developed more recent assumptions for the conformity process than those included in a submitted or approved SIP. For example, the MPO may have adopted new population, employment, and/or socioeconomic projections or updated transportation models since the SIP was submitted. In this case, an MPO would use the latest planning assumptions based on the newer projections and model improvements for conformity. The consultation process should be used to ensure that air quality and transportation planning processes anticipate such changes in planning assumptions.

It is expected that planning assumptions in the conformity process will change over time from those used in the SIP. Conformity determinations must reflect updated planning assumptions, even if those assumptions are different from those used in the SIP's development. EPA articulated this in the preamble to the November 24, 1993, conformity rule (58 FR 62210): "It should be expected that conformity determinations will deviate from the SIP's assumptions regarding VMT growth, demographics, trip generation, etc., because the conformity determinations are required by CAA section 176(c)(1) to use the most recent planning assumptions."

#### **8. What are the requirements for periodic emissions inventory updates, and how do they relate to the conformity rule's requirements for latest planning assumptions?**

CAA section 172(c)(3) requires that periodic emissions inventories be done in nonattainment areas. There are also specific requirements for periodic inventories under individual subparts to part D of Title 1, such as section 182(a)(3) for ozone and section 187(a)(5) for carbon monoxide (CO). Periodic inventory updates for SIPs must be based on the most current information available at the time that the inventory is developed. Examples of assumptions that are used in both inventory updates and conformity are VMT, socioeconomic variables, and vehicle fleet

characteristics. Although periodic inventory updates do not establish motor vehicle emissions budgets, they can be a valuable source of more recent and better planning assumptions for use in the conformity process.

Air quality and transportation agencies should work together to ensure that the latest planning assumptions are used in SIP inventory updates and conformity determinations. As discussed above, transportation planners should share more current assumptions with air quality agencies so that they can be included in the SIP. Air quality agencies should also provide more recent assumptions to transportation planners for conformity determinations. The interagency process required by 40 CFR 93.105 should be used to determine whether the assumptions used in periodic SIP inventory updates are better than the assumptions used previously for conformity determinations.

**9. Are there any assumptions in the SIP that must be used in conformity analyses?**

Yes. The transportation conformity rule (40 CFR 93.122(a)(6)) requires that certain assumptions in conformity analyses be consistent with those used in the SIP's motor vehicle emissions budgets. For example, ambient temperatures used in regional emissions analyses must be consistent with those used in the SIP. Under certain circumstances, it may be appropriate to use alternative factors instead of certain SIP assumptions, if it is determined through the interagency consultation process that these factors should be modified. For example, such modifications may be appropriate where additional or more geographically specific information is incorporated or a logically estimated trend in such factors beyond the period considered in the SIP is represented. EPA does not expect changes in the SIP's factors to occur often, and they could only occur after consultation among all local, State, and Federal agencies. All assumptions must be documented in the conformity determination that is released for public comment.

**10. What are the requirements for taking credit in conformity analyses for approved SIP control measures, such as I/M programs and TCMs? What should be considered when determining the latest planning assumptions in conformity regarding the implementation of approved SIP control measures?**

Section 93.110(e) of the conformity rule states that, "The conformity determination must use the latest existing information regarding the effectiveness of TCMs and other implementation plan measures which have already been implemented." EPA clarified its intentions for implementing this requirement in its conformity proposal (61 FR 36130, July 9, 1996) which stated that '93.110(e) "would clarify that conformity determinations must use the latest existing information regarding the effectiveness of all relevant SIP control measures, including TCMs,...."

Section 93.122(a)(2) of the conformity rule states that, "The emissions analysis may not include for emissions reduction credit any TCMs or other measures in the applicable implementation plan which have been delayed beyond the scheduled date(s) until such time as their implementation has been assured. If the measure has been partially implemented and it can be demonstrated that it is providing quantifiable emission reduction benefits, the emissions analysis may include that emission reduction credit." If a control measure in an approved SIP is delayed or changed in whole or in part (e.g., the legislative authority of a program has changed), then conformity determinations must reflect such a delay or change. The conformity analysis can only include the actual implementation of the control measure.

The interagency consultation process should be used to determine the latest planning assumptions regarding implementation of approved SIP measures. It is critical that all parties understand the impacts of altering the implementation of approved SIP measures. State and local

air agencies or other agencies that are responsible for air quality planning should inform transportation planners and provide technical assistance in quantifying the impact when the implementation of approved SIP measures could alter the emission reduction benefits assumed in previous conformity determinations. In addition, State and local air agencies should consider how SIP implementation issues can be addressed. They should immediately discuss how to make up for the emissions shortfalls and remedy the SIP, possibly through addressing implementation delays. The interagency consultation process should also be used to consider whether delays in the SIPs control measures necessitate a SIP revision to incorporate other measures. EPA commits to share information through the consultation process as appropriate when the implementation of an approved SIP measure changes and to address the implementation issues through the SIP process.

Local, State, and Federal agencies are also encouraged to be proactive in considering the impacts on the conformity process before the implementation of an approved SIP measure is changed. It is generally expected that air quality agencies would assist transportation agencies in quantifying the impacts of a change in approved SIP measures. The details of how this is accomplished should be determined through the consultation process.

**11. Can areas that do conformity for several different pollutants rely on different planning assumptions in conformity determinations?**

Planning assumptions that are applicable to conformity determinations for different pollutants must be consistent. For example, local estimates of population, employment, travel, and congestion should be consistent among analyses for different pollutants and precursors. Of course, there may be assumptions that would vary due to the inherent differences in analyzing pollutants (e.g., temperatures may be different for ozone and CO analyses due to the seasons in which these pollutants are formed).

**12. Does a revision in latest planning assumptions trigger a new conformity determination?**

No. A new regional emissions analysis and conformity determination would not be required solely to incorporate revised planning assumptions. Although revisions to planning assumptions would not trigger a conformity determination, future conformity determinations and supporting analyses must include the revised assumptions.<sup>4</sup>

**13. Can an MPO rely on a previous regional emissions analysis even if planning assumptions have changed?**

Yes. MPOs can rely on a previous emissions analysis if the requirements for 40 CFR 93.122(e) are met (e.g., no regionally significant projects have changed, no more than three years have elapsed since the last regional emissions analysis). An MPO can rely on the previous analysis when no new transportation or emissions modeling is otherwise required (e.g., when a TIP is updated and the transportation plan hasn't changed).<sup>5</sup> It is important to note that the conformity rule requires a new plan/TIP conformity determination and regional emissions analysis at least every 3 years. These determinations are done in many areas when the transportation plan is updated. The regional emissions analyses must be based on a new planning horizon of at least 20 years and the latest planning assumptions. Conformity determinations that rely on a previous analysis do not restart the 3-year conformity requirement.

If there are any questions regarding this guidance, please contact Meg Patulski of EPA at (734) 214-4842, Cecilia Ho of FHWA at (202) 366-9862, or Abbe Marner of FTA at (202) 366-4317.

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<sup>1</sup>In December 1995, the Federal speed limit law was changed to remove the mandatory 55 mph speed limit and allow States to set limits using their own discretion.

<sup>2</sup>"User's Guide to MOBILE5 (Mobile Source Emissions Factor Model)", U.S. Environmental Protection Agency, Office of Mobile Sources, May 1994; addendum issued in September 1996.

<sup>3</sup>November 3, 1999 EPA memorandum entitled, "Guidance on Motor Vehicle Emissions Budgets in One-Hour Ozone Attainment Demonstrations," and November 8, 1999 EPA memorandum entitled, "1-Hour Ozone Attainment Demonstrations and Tier 2/Sulfur Rulemaking."

<sup>4</sup> Discussed in the preamble to the January 11, 1993, conformity rule proposal (58 FR 3778).

<sup>5</sup>Discussed in the preamble to the January 11, 1993, conformity rule proposal (58 FR 3778).

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