Policy Guidance on the Use of MOVES2010 for State Implementation Plan Development, Transportation Conformity, and Other Purposes

Policy Guidance on the Use of MOVES2010 for State Implementation Plan Development, Transportation Conformity, and Other Purposes

Transportation and Regional Programs Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Table of Contents

1.   What is the purpose of this guidance?

This guidance describes how and when to use the MOVES2010 emissions model for state implementation plan (SIP) development, transportation conformity determinations, and other purposes.

EPA will be publishing a *Federal Register* notice of availability in the near future to approve MOVES2010 for official purposes. Upon publication of the *Federal Register* notice, MOVES2010 will become EPA's approved motor vehicle emissions factor model for estimating volatile organic compounds (VOCs), nitrogen oxides (NOx), carbon monoxide (CO), direct particulate matter (PM_{10} and $PM_{2.5}$) and other precursors from cars, trucks, buses, and motorcycles by state and local agencies for SIP and transportation conformity purposes outside of California. EPA intends to include in the notice a two-year grace period for using MOVES2010 for transportation conformity purposes. EPA coordinated closely with the U.S. Department of Transportation (DOT) in the development of this guidance.

The same *Federal Register* notice approving MOVES2010 will also approve the use of the EMFAC2007 model when completing $PM_{2.5}$ and PM_{10} hot-spot analyses for transportation conformity purposes in California. See Question 15 for more information about the use of EMFAC2007 for these conformity analyses.

EPA has also included information regarding the use of MOVES2010 for estimating mobile source air toxic and greenhouse gas emissions. Although there are no SIP or conformity requirements for these emissions, MOVES2010 is EPA's best tool for estimating air toxic and greenhouse gas emissions from on-road mobile sources. See Questions 16 and 17 for further information.

The following contacts are available at EPA's Office of Transportation and Air Quality regarding this guidance:
- for general questions about the MOVES model, email mobile@epa.gov;
- for SIP questions, contact Rudy Kapichak at (734) 214-4574;
- for transportation conformity questions, contact Meg Patulski at (734) 214-4842; and
- for questions about the National Emissions Inventory, contact Laurel Driver at EPA's Office of Air Quality Planning and Standards at (919) 541-2859.

A copy of this policy guidance can be found at the following website: http://www.epa.gov/otaq/stateresources/transconf/policy.htm.

2.   What is MOVES2010 and how does it compare to MOBILE6.2?

MOVES2010 is a computer model designed to estimate emissions factors and emissions inventories of VOCs, NOx, CO, PM_{10}, $PM_{2.5}$ and other pollutants and precursors for cars,

trucks, buses, and motorcycles. MOVES2010 was designed to replace the previous emissions model, MOBILE6.2, which was released in 2004 (69 FR 28830). MOVES2010 replaces MOBILE6.2 as the emissions model that EPA will maintain and support.

MOVES2010 improves upon MOBILE6.2 in many respects. For example, MOVES2010 is based on a review of the vast amount of in-use vehicle data collected and analyzed since the release of MOBILE6.2, including millions of emissions measurements from light-duty vehicles. Analysis of this in-use data has enhanced EPA's understanding of how on-road mobile sources contribute to emissions inventories ,and has also improved the agency's understanding of the relative effectiveness of various control strategies. MOVES2010 has a database-centered design that allows users much greater flexibility in organizing input and output data. This structure also allows EPA to update emissions data incorporated in MOVES2010 more easily. MOVES2010 estimates $PM_{2.5}$ and PM_{10} to account for speed and temperature variations, and models emissions at high resolution, which allows users to incorporate a much wider array of activity data and to model emissions at the link and project level.

EPA has performed a preliminary comparison of MOVES2010 to MOBILE6.2 using local data for several different urban counties, varying the local data used by fleet age distribution, fraction of light- and heavy-duty vehicle miles travelled (VMT), local fuel specifications, meteorology, and other input factors. Actual results will vary based on local inputs in a given area, with local variations in fleet age distribution and composition having a significant influence on the final results. In general, VOC emissions are lower when using MOVES2010 when compared to MOBILE6.2, while both NOx and PM emissions are higher.[1]

MOVES2010 includes the capability to estimate vehicle exhaust and evaporative emissions as well as brake wear and tire wear emissions for criteria pollutants and precursors. However, MOVES2010 does not include the capability to estimate emissions of re-entrained road dust. To estimate emissions from re-entrained road dust, practitioners should continue to use the latest approved methodologies.[2]

---

[1] For further information, please see EPA's communications materials for MOVES release on the following website: http://www.epa.gov/otaq/models/moves/index.htm.

[2] See EPA's notice of availability published in the *Federal Register* on May 19, 2004, 69 FR 28830-28832. Also see EPA's memoranda: "Policy Guidance on the Use of the November 1, 2006, Updated to AP-42 for Re-entrained Road Dust for SIP Development and Transportation Conformity," August 2, 2007; and "Policy Guidance on the Use of MOBILE6.2 and the December 2003 AP-42 Method for Re-entrained Road Dust for SIP Development and Transportation Conformity," February 24, 2004. These documents are available on EPA's website at: http://www.epa.gov/otaq/stateresources/transconf/policy.htm.

3.   What additional resources are available to assist in implementing MOVES2010?

In addition to this guidance document, EPA has developed several documents to assist in implementing MOVES2010, including the following:

- "MOVES2010 User Guide": This guide provides detailed instructions for setting up and running MOVES2010. Available at http://www.epa.gov/otaq/models/moves/index.htm.

- "Technical Guidance on the Use of MOVES2010 for Emission Inventory Preparation in State Implementation Plans and Transportation Conformity": This document provides guidance on appropriate input assumptions and sources of data for the use of MOVES2010 in SIP submissions and regional emissions analyses for transportation conformity determinations. Available at http://www.epa.gov/otaq/stateresources/transconf/policy.htm.

- "Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas": This document explains how to use MOVES2010 to complete hot-spot analyses required for projects of local air quality concern in $PM_{2.5}$ and PM_{10} nonattainment and maintenance areas. This guidance is presently under development and will be posted on the EPA's transportation conformity policy guidance website (http://www.epa.gov/otaq/stateresources/transconf/policy.htm) when available.[3]

Additional training materials, examples, and MOVES2010 technical information are available at the MOVES website: http://www.epa.gov/otaq/models/moves/index.htm.

4.   Does this guidance create new requirements?

The discussion in this document is intended solely as guidance. The statutory provisions and EPA regulations described in this document contain legally binding requirements. This document is not a regulation itself, nor does it change or substitute for those provisions and regulations. EPA retains the discretion to adopt approaches on a case-by-case basis that may differ from this document, but still comply with the statute and regulations. Any decisions regarding a particular SIP or conformity determination will be made based on the statute and regulations. This document may be revised periodically without public notice.

---

[3] EPA will be making a draft available for public comment prior to finalizing this guidance.

5.   How does the release of MOVES2010 affect SIPs that have already been submitted and/or approved, or SIPs that are currently under development?

In general, EPA believes that MOVES2010 should be used in ozone, CO, PM, and NO_2 SIP development as expeditiously as possible. The Clean Air Act requires that SIP inventories and control measures be based on the most current information and applicable models that are available when a SIP is developed.[4] However, it is also important to recognize the time and level of effort that states have already undertaken in SIP development with MOBILE6.2. States should consult with their EPA Regional Office if they have questions about how MOVES2010's release affects specific nonattainment or maintenance areas. Early consultation can facilitate EPA's adequacy finding or SIP approval process. The following paragraphs articulate EPA's policy for the use of MOVES2010 in the development of SIPs.

The release of MOVES2010 would not require a SIP revision solely based on the existence of the new model. EPA believes that the Clean Air Act does not require states that have already submitted SIPs or will submit SIPs shortly after the release of MOVES2010 to revise these SIPs simply because a new motor vehicle emissions model is now available. EPA believes that this is supported by existing EPA policies and case law [Sierra Club v. EPA, 356 F.3d. 296, 307-08 (D.C. Cir. 2004)]. Of course, states can choose to use MOVES2010 in these SIPs, for example, if it is determined that it is appropriate to update motor vehicle emissions budgets with the model for future conformity determinations. However, EPA does not believe that the state's use of MOBILE6.2 should be an obstacle to EPA approval for reasonable further progress (RFP), attainment, or maintenance SIPs that have been or will soon be submitted based on MOBILE6.2, assuming that such SIPs are otherwise approvable and significant SIP work has already occurred (e.g., attainment modeling for an attainment SIP has already been completed with MOBILE6.2). It would be unreasonable to require the states to revise these SIPs with MOVES2010 since significant work has already occurred based on the latest information available at the time, and EPA intends to act on these SIPs in a timely manner.

States should use MOVES2010 where SIP development is in its initial stages or has not progressed far enough along that switching to MOVES2010 would create a significantly adverse impact on state resources. MOVES2010 should be incorporated into these SIPs since the emissions estimates from MOVES2010 are based on the best information currently available.

EPA also believes it may not be reasonable to approve a MOBILE6.2-based SIP the longer that MOVES2010 is in place and available for use. Since SIPs must be based on applicable models and data inputs, EPA may not have a basis to approve a SIP developed with MOBILE6.2 significantly after MOVES2010 becomes available. If you have

---

[4] See Clean Air Act section 172(c)(3) and 40 CFR 51.112(a)(1).

questions about which model should be used in your SIP, please consult with your EPA Regional Office.

Incorporating MOVES2010 into the SIP now could also assist areas in mitigating possible transportation conformity difficulties in the future after the MOVES2010 conformity grace period ends. New conformity analyses that are started after the grace period is over must be based on MOVES2010 (40 CFR 93.111), so having MOVES2010-based SIP motor vehicle emissions budgets in place at that time could provide more consistency with transportation conformity determinations. See Question 10 for more information on MOVES2010 and transportation plans and transportation improvement program (TIP) conformity.

6. <u>What emissions model must be used for preparing inventories for SIPs for areas designated nonattainment for the 2006 PM$_{2.5}$ NAAQS?</u>

EPA believes that MOVES2010 is the emissions model that must be used for developing on-road mobile source inventories for the 2006 PM$_{2.5}$ NAAQS SIPs (except those in California) because it reflects the latest available information.[5] EPA designated nonattainment areas for this NAAQS on November 13, 2009 (74 FR 58688), which should give state and local agencies time to incorporate MOVES2010 into SIP submissions for this NAAQS. Using MOVES2010 to create SIP budgets may also help in the transition to using MOVES2010 for transportation conformity purposes at the end of the conformity grace period (see Question 10).

7. <u>When existing SIPs and motor vehicle emissions budgets are revised with MOVES2010, what do states need to submit to show that a SIP continues to meet applicable requirements?</u>

As stated in Question 5, a SIP revision would not be required solely due to the release of MOVES2010 for SIPs that have been approved, submitted, or where significant development has already occurred. However, there may be other cases where an existing SIP is revised with MOVES2010. In addressing these cases, EPA is applying the same principles it has in the past when motor vehicles emissions budgets have been revised using a new emissions model. States should consult with their EPA Regional Office prior to submitting MOVES2010 SIP revisions. Early consultation can facilitate EPA's adequacy finding or SIP approval process.

EPA has always required under the Clean Air Act that revisions to existing SIPs and budgets continue to meet applicable requirements (e.g., RFP or attainment). For example, if a state revises a maintenance plan to add or delete control measures, the state needs to show in its revised SIP that maintenance continues to be demonstrated with the new mix of control measures. Similarly, states that revise existing SIPs with MOVES2010 must show that the SIP continues to meet applicable requirements with the new level of motor vehicle emissions calculated by the new model.

---

[5] See Clean Air Act section 172(c)(3) and 40 CFR 51.112(a)(1).

In addition, the transportation conformity rule (40 CFR 93.118(e)(4)(iv)) requires that "the motor vehicle emissions budget(s), when considered together with all other emissions sources, is consistent with applicable requirements for reasonable further progress, attainment, or maintenance (whichever is relevant to the given implementation plan submission)." This and other criteria must be satisfied before EPA can find submitted budgets adequate or approve them for use in the conformity process.

The following paragraphs describe how to meet applicable requirements for existing SIPs that are revised with MOVES2010, including ideas for how to streamline these revisions whenever possible.

Use of latest planning assumptions: When SIPs are revised with MOVES2010, base year, milestone year and attainment/maintenance year motor vehicle emissions inventories will need to be recalculated with the latest available planning assumptions. As required by Clean Air Act section 172(c)(3) and EPA's regulation at 40 CFR 51.112(a), states must use the latest planning assumptions available at the time that the SIP is developed, including but not limited to the latest information for vehicle miles traveled (VMT), speeds, fleet mix, and SIP control measures.[6] Base year and historical year inventories must use the latest data available for those years. Future year projection inventories must also be based on the latest data available. If planning assumptions have not changed since the original SIP was submitted, the state should document this in its new SIP submission.

In addition, states must consider whether growth and control strategy assumptions for non-motor vehicle sources (i.e., stationary, area and non-road mobile sources) are still accurate at the time that the MOVES2010 SIP revision is developed. Such assumptions include population and economic assumptions and any allowable emissions relied upon for stationary or other sources. If these assumptions have not changed, the state can simply re-submit the original SIP with the revised motor vehicle emissions inventories and budgets and meet the remaining requirements as discussed below. Otherwise, the emissions categories in the SIP that have changed must be brought up to date.

Milestone, attainment or maintenance demonstration: As discussed above, SIP revisions based on MOVES2010 must continue to show that the SIP still meets applicable requirements (e.g., attainment or maintenance) when previous motor vehicle emissions inventories are replaced with MOVES2010 inventories. The level of effort needed for this demonstration can vary depending upon how MOVES2010 affects the level of motor vehicle emissions and whether non-motor vehicle inventories require updating. The method used to develop the original demonstration could also be a factor.

Areas can revise their motor vehicle emissions inventories and budgets using MOVES2010 without revising the entire SIP or completing additional modeling if:

---

[6] See EPA and DOT's joint "Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations," EPA420-B-08-901 (Dec. 2008). This guidance also addresses requirements for using the latest planning assumptions in SIP development.

(1) The SIP continues to meet applicable requirements when the previous motor vehicle emissions inventories are replaced with MOVES2010 base year and milestone, attainment, or maintenance year inventories; and,

(2) The state can document that the growth and control strategy assumptions for non-motor vehicle sources continue to be valid and any minor updates do not change the overall conclusions of the SIP.

For example, consistent with EPA's SIP modeling guidance for various pollutants, if an ozone SIP relied on changes in emissions from the base year to an attainment or maintenance year inventory to estimate relative changes in monitored ozone levels, the first criterion could be satisfied by demonstrating that the relative emissions reductions between the base year and the attainment or maintenance year are the same or greater using MOVES2010 than they were previously. Alternatively, if an ozone attainment SIP relied on absolute model predictions for the future attainment year, then the first criterion could be satisfied by demonstrating that the MOVES2010 estimates are equal to or lower than the previous estimates for the future attainment year. Or, if a CO maintenance plan relied on either a relative or absolute demonstration, the first criterion could be satisfied by documenting that the relative emissions reductions between the base year and the maintenance year are the same or greater using MOVES2010. In any case, if using the latest planning assumptions for emissions estimates results in changes to other emissions categories (e.g., stationary or area emissions), the demonstration would apply to the entire inventory, rather than just the on-road mobile inventory.

If both of the above criteria are met, the state can simply re-submit the original SIP with the revised MOVES2010 motor vehicle emissions inventories. If either criterion is not met, the emissions categories in the SIP that have changed must be brought up to date. Any changes in control strategies, including stationary source inventories, must be factored in to both base and future year inventories to determine if they would indicate a nonattainment problem. However, a state would not necessarily have to revise a non-motor vehicle emissions inventory category just to account for a regulatory or permit change that *reduces* these emissions in an attainment or maintenance year relative to the existing SIP.

Regardless of the technique used, a more rigorous reassessment of the SIP's demonstration may be necessary if a state decides to reallocate the original SIP's excess emissions reductions to the motor vehicle emissions budget as a safety margin.[7] In other words, the state will need to assess how its original demonstration is affected by using MOVES2010 and confirm whether excess emissions exist prior to allocating them to the motor vehicle emissions budget. This assessment would need to be sufficiently detailed to permit the requantification of any excess emissions. This assessment is critical to

---

[7] A "safety margin" is the amount by which the total projected emissions from all sources of a given pollutant are less than the total emissions that would satisfy the applicable requirement for reasonable further progress, attainment, or maintenance (40 CFR 93.101). See also 40 CFR 93.124(a) for its application.

ensure that SIP budgets in the context of all other emissions sources continue to protect public health and meet the conformity rule's adequacy criteria (40 CFR 93.118(e)).

8. How will MOVES2010 affect the need for emissions reductions in the development of future attainment or maintenance SIPs?

The answer to this question depends upon the unique circumstances of each nonattainment or maintenance area. The emissions comparisons depend very heavily on the pollutants of concern, the dates of concern, and on existing local regulations, traffic patterns, fleet age, and mix of cars and trucks. In some cases, a change from MOBILE6.2 to MOVES2010 may result in increased emissions estimates, while in other cases it may result in decreased emissions estimates for various time periods.

Moreover, because of the complex chemistry and meteorology involved in air pollution, the implications of changes in highway vehicle emissions may not be clear until multiple years are examined and the new emissions levels are applied to an air quality model. Relative differences in emissions over time from MOBILE6.2 to MOVES2010 may be as important as, or more important than, differences between the two models in any one year. Therefore, MOVES2010 users should not immediately assume that increases or decreases in emissions in any single year imply the need for more or fewer SIP control measures until those changes in emissions have been put in the complete SIP context.

An increase in emissions due to the use of MOVES2010 may affect an area's ability to demonstrate conformity for its transportation plan and/or TIP. Areas are encouraged, through the interagency consultation process, to consider if and how MOVES2010 will impact their future conformity determinations and discuss any concerns with the appropriate EPA Regional Office.

9. What role will MOVES2010 play in EPA's National Emissions Inventory?

The National Emissions Inventory (NEI) is updated with state, local, and tribal submissions once every three years. The current NEI under development is for the year 2008. For 2008, EPA is using the National Mobile Inventory Model (NMIM) which runs MOBILE6.2 for on-road emissions. EPA's preference is that agencies submit *activity and input updates* to NMIM's National County Database, rather than emissions, in order to allow for more in-depth analysis and consistent, integrated calculated emissions in the NEI. However, agencies may also submit *emissions* for the 2008 cycle generated with either MOBILE6.2 or MOVES2010 (or EMFAC2007 if in California). EPA expects to use MOVES2010 for the 2011 NEI cycle for states other than California.

TRANSPORTATION CONFORMITY

10. When will the use of MOVES2010 be required for transportation conformity determinations?

EPA intends to establish a two-year grace period before MOVES2010 is required for new transportation plan, TIP, and project-level conformity determinations. The effective date of the *Federal Register* notice announcing the approval of the MOVES2010 model will constitute the start of the conformity grace period. EPA coordinated closely with DOT in the development of this guidance. See Questions 11, 12 and 13 for details about how this grace period will be implemented.

Transportation conformity is a Clean Air Act requirement to ensure that federally supported highway and transit activities are consistent with ("conform to") the SIP. Conformity to a SIP means that a transportation activity will not cause or contribute to new air quality violations; worsen existing violations; or delay timely attainment of the national ambient air quality standards or an interim milestone.

The transportation conformity rule (40 CFR Parts 51 and 93) requires that conformity analyses be based on the latest motor vehicle emissions model approved by EPA. Section 176(c)(1) of the Clean Air Act 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...." When EPA approves a new emissions model like MOVES2010, it establishes a grace period before the model is required to be used for conformity analyses. The conformity rule provides for a grace period for new emissions models of between 3-24 months, to be established by notification in the *Federal Register* (40 CFR 93.111(b)(1)).

EPA has previously explained how it will determine the appropriate length of a conformity grace period (58 FR 62211):

> "EPA and DOT will consider extending the grace period if the effects of the new emissions model are so significant that previous SIP demonstrations of what emission levels are consistent with attainment would be substantially affected. In such cases, States should have an opportunity to revise their SIPs before MPOs must use the model's new emissions factors."

In consultation with DOT, EPA must consider many factors when establishing a grace period for conformity determinations, including the degree of change in emissions models and the effects of the new model on the transportation planning process (40 CFR 93.111(b)(2)).

11. Under what circumstances will the MOVES2010 grace period be shorter than two years?

The *Federal Register* notice announcing the approval of MOVES2010 and the conformity grace period will state that the grace period will be two years unless new motor vehicle emissions budgets become applicable sooner, in which case the grace

period will end once these new MOVES2010-based approved or adequate budgets become effective. The grace period will be shorter than two years for a given pollutant if an area revises its SIP and budgets with MOVES2010, and such budgets become applicable for regional conformity purposes prior to the end of the two-year grace period. In this case, the new regional emissions analysis must use MOVES2010 if the conformity determination is based on a MOVES2010-based budget. The interagency consultation process must be used to develop any SIP revision based on MOVES2010 (40 CFR 93.105(a)).

Areas that are designated nonattainment or maintenance for multiple pollutants may rely on both MOVES2010 and MOBILE6.2 to determine conformity for different pollutants during the grace period. For example, if an area revises a previously submitted (but not approved) MOBILE6.2-based PM_{10} SIP with MOVES2010 and EPA finds these revised MOVES2010 budgets adequate for conformity, such budgets would apply for conformity on the effective date of the *Federal Register* notice announcing EPA's adequacy finding. In this example, if an area was in nonattainment for PM_{10} and ozone, the MOVES2010 grace period would end for PM_{10} once EPA found the new MOVES2010-based SIP budgets adequate. However, MOBILE6.2 could continue to be used for ozone conformity determinations until the end of the MOVES2010 grace period.[8] In addition, the length of the grace period for hot-spot analyses would not be affected by an early submission of MOVES2010-based SIP budgets. In this example, for PM_{10} hot-spot analyses the two-year grace period would still apply even if the grace period is shortened for regional PM_{10} conformity analyses, as explained in Question 13. EPA Regional Offices should be consulted for questions regarding other situations in multi-pollutant areas.

In addition, if an area revises a previously approved SIP using MOVES2010, the revised MOVES2010 budgets would be used for conformity purposes once EPA approves the MOVES2010 SIP revision, in most cases. In general, submitted SIPs cannot supersede approved budgets until they are approved. However, 40 CFR 93.118(e)(1) allows an approved budget to be replaced by an adequate budget if EPA's approval of the initial budgets specifies that the budgets being approved may be replaced in the future by new adequate budgets. This flexibility has been used in limited situations in the past, such as during the transition from MOBILE5 to MOBILE6. In such cases, the MOVES2010-based budgets would be used for conformity purposes once they have been found adequate, if requested by the state in its SIP submission and specified in EPA's SIP approval. States should consult with their EPA Regional Office to determine if this flexibility applies to their situation.

12. How will the MOVES2010 grace period be implemented for regional emissions analyses?

---

[8] In this example, such an area would use MOVES2010 to develop a regional emissions analysis for comparison to the revised MOVES2010-based budgets (e.g., PM_{10} and NOx budgets). The regional emissions analysis for ozone could be based on MOBILE6.2 for the VOC and NOx budgets in the ozone SIP for the remainder of the conformity grace period.

During the conformity grace period, areas should use the interagency consultation process to examine how MOVES2010 will impact their future transportation plan and TIP conformity determinations, including regional emissions analyses. Areas should carefully consider whether the SIP and motor vehicle emissions budget(s) should be revised with MOVES2010 or if transportation plans and TIPs should be revised before the end of the conformity grace period, since doing so may be necessary to ensure conformity in the future.

Regional emissions analyses that are started during the grace period can use either MOBILE6.2 or MOVES2010. When the grace period ends, MOVES2010 will become the only approved motor vehicle emissions model for transportation conformity purposes in states outside California. In general, this means that all new conformity analyses started after the end of the grace period must be based on MOVES2010, even if the SIP is based on MOBILE6.2. As discussed above, the grace period for new regional emissions analyses would be shorter for a given pollutant if an area revised its SIP and budgets with MOVES2010 and such budgets were approved or found adequate for conformity purposes prior to the end of the two-year grace period.

The conformity rule provides some flexibility for analyses that are started before the end of the grace period. Regional emissions analyses that begin before or during the grace period may continue to rely on MOBILE6.2. The interagency consultation process should be used if it is unclear if a MOBILE6.2-based analysis was begun before the end of the grace period. If you have questions about which model should be used in your conformity determination, you can also consult with your EPA Regional Office.

13. How will the MOVES2010 grace period be implemented for CO, PM_{10} and $PM_{2.5}$ quantitative hot-spot analyses?

EPA intends to establish a two-year grace period before MOVES2010 will be required to be used when completing new CO, PM_{10} and $PM_{2.5}$ quantitative hot-spot analyses in areas outside of California. This grace period would begin on the effective date of the *Federal Register* notice announcing the release of the final version of MOVES2010. EPA believes that a two-year grace period is appropriate before requiring MOVES2010 for new hot-spot analyses, due to the degree of change in the model as compared to past EPA models and the time necessary to prepare for using MOVES2010 for project-level analyses. See Question 10 for more general information about the conformity grace period.

Sections 93.116 and 93.123 of the conformity rule contain the requirements for when a hot-spot analysis is required for project-level conformity determinations.[9] The

---

[9] In CO nonattainment and maintenance areas, a hot-spot analysis is required for all non-exempt projects, with quantitative hot-spot analyses being required for larger, congested intersections and other projects (40 CFR 93.123(a)(1)). In addition, the conformity rule requires that a quantitative PM_{10} or $PM_{2.5}$ hot-spot analysis be completed for certain projects of local air quality concern once EPA releases modeling guidance and announces in the *Federal Register* that the PM_{10} and $PM_{2.5}$ quantitative hot-spot analysis requirements are in effect (40 CFR 93.123(b)). In coordination with DOT, EPA is currently preparing guidance on how to conduct quantitative $PM_{2.5}$ and PM_{10} hot-spot modeling to implement this requirement.

conformity rule provides some flexibility for analyses that are started before the end of the grace period. A conformity determination for a transportation project may be based on a previous model if the analysis was begun before or during the grace period, and if the final environmental document for the project is issued no more than three years after the issuance of the draft environmental document (40 CFR 93.111(c)). The interagency consultation process should be used if it is unclear if a previous analysis was begun before the end of the grace period. If you have questions about which model should be used in your conformity determination, you can also consult with your EPA Regional Office.

Implementation of grace period for CO hot-spot analyses: For CO hot-spot analyses that are started during the two-year grace period, project sponsors can choose to use either MOBILE6.2 or MOVES2010. EPA encourages sponsors to use the consultation process to determine which option may be most appropriate for a given situation. Any new quantitative CO hot-spot analyses for conformity purposes begun after the end of the grace period must be based on MOVES2010.

Implementation of grace period for PM_{10} and $PM_{2.5}$ hot-spot analyses: For PM_{10} and $PM_{2.5}$ hot-spot analyses, the conformity rule presently requires a *qualitative* analysis to be performed until EPA releases guidance on how to conduct *quantitative* hot-spot analyses for PM and announces in the *Federal Register* that such analyses are in effect (40 CFR 93.123(b)).[10] EPA stated in the preamble to the March 10, 2006 final conformity rule that finalizing the MOVES2010 emissions model was critical before quantitative PM hot-spot analyses are required, due to the limitations of applying MOBILE6.2 for PM at the project level. EPA also stated that today's guidance would be used to describe the grace period for using MOVES2010 in quantitative hot-spot analyses for certain project-level conformity determinations in PM nonattainment and maintenance areas.[11]

During the conformity grace period, project sponsors can continue to conduct qualitative PM_{10} and $PM_{2.5}$ hot-spot analyses for analyses that are started during the grace period. Section 93.111(c) of the conformity rule allows conformity determinations for projects based on the previous version of an emissions model to be completed after the end of the MOVES2010 grace period, if the analysis was begun before the end of the grace period.[12] Quantitative PM_{10} and $PM_{2.5}$ hot-spot analyses can also be completed for conformity purposes during the grace period, if desired. However, any quantitative PM_{10} and $PM_{2.5}$ hot-spot analyses conducted during the grace period must use MOVES2010, since MOBILE6.2 does not have the capabilities to conduct project-level PM emissions analyses and is therefore not approved for this purpose, as described above. Any quantitative PM_{10} or $PM_{2.5}$ hot-spot analysis for conformity purposes begun after the end of the grace period must use MOVES2010. EPA is currently working with DOT to

---

[10] See EPA and FHWA's joint "Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas," EPA420-B-06-902 (March 2006).
[11] See EPA's March 10, 2006 final conformity rule for further information (71 FR 12498-12502).

[12] Since previous emissions models have not been approved in the past for quantitative PM hot-spot analyses, a qualitative PM analysis is considered the previous version of the relevant emissions model for the purposes of 40 CFR 93.111(c).

prepare guidance on how to conduct quantitative $PM_{2.5}$ and PM_{10} hot-spot modeling for transportation conformity purposes.[13] See Question 15 for what emissions model must be used when completing quantitative PM hot-spot analyses for certain projects within California.

14. What model should be used for the first transportation plan and TIP conformity determinations for areas designated nonattainment for the 2006 $PM_{2.5}$ NAAQS?

Areas designated nonattainment under the 2006 $PM_{2.5}$ NAAQS have a one-year grace period before conformity applies (40 CFR 93.102(d)). When completing their initial conformity determinations for this NAAQS, areas outside California will have the option to take advantage of any time that remains in the two-year MOVES2010 grace period at that time. In general, initial transportation plan and TIP conformity determinations for the 2006 $PM_{2.5}$ NAAQS can be made using either MOBILE6.2 or MOVES2010, but this decision should be made on an area-by-area basis. See Questions 10, 11, and 12 for further details on using MOVES2010 for regional emissions analyses.

See EPA's "Interim Transportation Conformity Guidance for 2006 $PM_{2.5}$ NAAQS Nonattainment Areas" (EPA-420-B-09-036, November 2009) for more information. EPA will also publish a final conformity rule in the near future that will include final conformity requirements for the 2006 $PM_{2.5}$ NAAQS.[14] Areas should consult with their EPA Regional Office on implementing conformity for the 2006 $PM_{2.5}$ NAAQS.

15. What model should be used for quantitative PM_{10} and $PM_{2.5}$ hot-spot analyses for certain project-level conformity determinations in California?

For quantitative PM_{10} and $PM_{2.5}$ hot-spot analyses completed for projects within California, EMFAC2007 must be used instead of MOVES2010. EPA previously approved the use of EMFAC2007 for SIP development in California and for most transportation conformity analyses (i.e., all regional emissions analyses and CO hot-spot analyses) (73 FR 3464) and intends to extend this approval to quantitative PM hot-spot analyses in the same *Federal Register* notice that approves MOVES2010 for transportation conformity use. Directions for using EMFAC2007 for quantitative PM hot-spot analysis will be included in EPA's "Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas" when that guidance is released.

---

[13]See 40 CFR 93.123(b)(4). The requirements for quantitative PM hot-spot analyses will not take effect until EPA releases modeling guidance on this subject and announces in the *Federal Register* that these requirements are in effect.

[14] See http://www.epa.gov/otaq/stateresources/transconf/policy.htm for the interim guidance and EPA's future final conformity rule.

USING MOVES2010 FOR OTHER PURPOSES

16. Can MOVES2010 be used to estimate greenhouse gas emissions?

MOVES2010 is currently the best tool EPA has for estimating greenhouse gas (GHG) emissions from the transportation sector. It is a significant improvement over MOBILE6.2 and previous versions of MOVES for GHG estimation. State and local agencies estimating GHG emissions in the transportation planning process should consider using MOVES2010 for GHG emissions analyses in the future.

17. Can MOVES2010 be used to estimate mobile source air toxics?

MOVES2010 estimates emissions for the following mobile source air toxics (MSATs): benzene, 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, naphthalene, ethanol, and MTBE. MOVES2010 is EPA's best available tool for quantifying emissions of these MSATs. State and local agencies, academic institutions, and other interested parties who are interested in analyzing MSAT emissions from transportation projects are encouraged to use MOVES2010. EPA is working to integrate additional MSATs into the MOVES modeling framework in the near future.

EPA notes that there are no SIP and transportation conformity requirements for air toxics. Regarding the analysis of MSAT emissions in the National Environmental Policy Act (NEPA) process, DOT has responsibility for implementing NEPA for federally-funded or approved transportation projects.