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PRACTITIONER'S HANDBOOK

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ADDRESSING AIR QUALITY ISSUES IN THE NEPA PROCESS FOR HIGHWAY PROJECTS

This handbook is intended to assist practitioners in addressing air quality issues, including transportation conformity requirements, as part of the National Environmental Policy Act (NEPA) process for highway projects. The handbook summarizes key requirements under NEPA and the Clean Air Act and provides advice for documenting compliance with the Clean Air Act requirements as a part of the NEPA process.

The Background Briefing section of the handbook provides an overview of requirements and relevant terminology.

Topics addressed in the Practical Tips section of the handbook include:

- Determining if the project is subject to transportation conformity requirements
- Coordinating regional conformity determinations with the NEPA process
- Conducting hot-spot analyses and making project-level conformity determinations
- Considering mobile-source air toxics (MSAT) emissions
- Documenting air quality analyses and determinations in the NEPA process

The Practitioner's Handbooks are produced by the Center for Environmental Excellence by AASHTO. The Center's Handbooks provide practical advice on a range of environmental issues that arise during the planning, development, and operation of transportation projects.

The Handbooks are primarily intended for use by project managers and others who are responsible for coordinating compliance with a wide range of regulatory requirements. With their needs in mind, each Handbook includes:

- key issues to consider;
- a background briefing;
- practical tips for achieving compliance; and
- a list of reference materials.

In addition, key regulations, guidance materials, and sample documents for each Handbook are posted on the Center's web site at http://environment.transportation.org.

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Overview



This Handbook is intended to assist practitioners in addressing air quality issues, including transportation conformity requirements, as part of the National Environmental Policy Act (NEPA) process for highway projects. The Handbook summarizes key requirements under NEPA and the Clean Air Act and provides advice for documenting compliance with the Clean Air Act requirements as a part of the NEPA process.

The Background Briefing section of the Handbook provides an overview of requirements and relevant terminology. Topics addressed in the Practical Tips section of the Handbook include:

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- Documenting air quality analyses and determinations in the NEPA process

Please note that this Handbook provides only a general introduction to transportation conformity requirements in relation to the analyses and decisions documented in the NEPA process; it is not a manual for carrying out air quality modeling or for making transportation conformity determinations. As such, this Handbook is likely to be most useful to practitioners who are experienced in NEPA but are not air quality specialists.

Background Briefing

This section provides an overview of key terms and concepts used in addressing air quality issues in the NEPA process for a highway project, including requirements for regional and project-level transportation conformity determinations under the Clean Air Act. Regional conformity requirements are addressed outside of the NEPA process as part of metropolitan planning, but they must be satisfied before the NEPA process is completed.

NEPA Requirements

The NEPA requirements applicable to an air quality analysis for a highway project are determined based on the Council on Environmental Quality (CEQ) regulations and the environmental review regulations issued by FHWA (23 CFR Part 771). These requirements are further explained in several FHWA guidance documents, as described below. Many state departments of transportation also have issued guidance documents with advice on preparing air quality analyses in NEPA documents.

CEQ Regulations. The CEQ regulations require consideration of the effects of a proposed action, including "ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative."[1] Consistent with the CEQ regulations, FHWA's technical advisory on environmental documents requires consideration of air quality effects as part of NEPA compliance.[2]

Comparative Analysis of Effects on Air Quality. A comparative analysis of air quality impacts can be conducted as a part of compliance with NEPA. An EIS requires a comparative analysis of the environmental impacts of the alternatives,

1 40 CFR 1508.8.

2 FHWA, Technical Advisory T6640.8A, "Guidance for Preparing and Processing Environmental and Section 4(f) Documents" (Oct. 30, 1987) ("Technical Advisory T6640.8A").

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including where applicable the alternatives' air quality impacts.[3] The requirements for an EA are more flexible both in terms of the number of alternatives considered and the level of detail in which impacts are analyzed. A categorical exclusion (CE) determination normally does not require an alternatives analysis.

Consideration of Air Quality Effects for Categorical Exclusions. Impacts on air quality should be considered when determining whether a project meets the criteria for a CE. The FHWA environmental regulations require a finding, as part of a CE determination, that the project will "not involve significant air, noise, or water quality impacts."[4]

Documentation of Compliance with Other Requirements. The FHWA environmental regulations provide that a Final EIS or Finding of No Significant Impact (FONSI) "should document compliance with requirements of all applicable environmental laws and other requirements."[5] Accordingly, compliance with NEPA includes not only a discussion of air quality effects, but also documentation of compliance with transportation conformity requirements under the Clean Air Act.[6] Normally, the conformity determination is documented in the Final EIS or FONSI. Where the conformity determination cannot be made in the Final EIS, FHWA guidance requires it to be made by the time the Record of Decision (ROD) is issued.

Consideration of MSAT Emissions. FHWA has issued and periodically updated interim guidance specifying the types of projects for which a NEPA document should include an analysis of MSAT emissions.[7] This interim guidance identifies three categories of projects: those with "no potential," "low potential," and "higher potential" to have meaningful MSAT emissions. A different level of MSAT analysis is recommended for each category of projects. (See below, "Mobile Source Air Toxics Analysis in NEPA Documents").

Consideration of Greenhouse Gas (GHG) Emissions. FHWA has not issued guidance addressing GHG emissions in NEPA reviews. As with other environmental impacts, EAs and EISs would address greenhouse gas emissions or climate change impacts depending on the significance or the degree of controversy of the issue for the particular action.

Current Practices. Air quality issues are normally considered as part of the environmental impacts analysis in a NEPA document for a highway project, but the particular approach to the air quality analysis—the level of detail and the topics addressed—is determined on a case-by-case basis. Depending on the project, the following topics may be included in the air quality analysis in a NEPA document:

- Consideration of GHG emissions
- Documentation of compliance with conformity requirements, including hot-spot analysis where applicable
- Comparative emissions analysis for pollutants with national standards (known as "criteria pollutants")
- Comparative analysis of MSAT emissions
- Discussion of construction emissions and mitigation
- Discussions of indirect and cumulative impacts on air quality
- Documentation of interagency coordination and public involvement

Transportation Conformity—The Basics

Section 176(c) of the Clean Air Act prohibits Federal agencies from funding or approving activities that do not "conform to" an applicable State Implementation Plan (SIP) for achieving compliance with the National Ambient Air Quality Standards (NAAQS).[8] The rationale for this requirement is that the Federal government's actions should be consistent with states' efforts to achieve and maintain compliance with Federally-established air quality standards.

3 40 CFR 1502.14. (An EIS "should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public.")

4 23 CFR 771.117(a) and 771.118(a).

5 23 CFR 771.133. This regulation also states that "[i]f full compliance is not possible by the time the Final EIS or FONSI is prepared, the Final EIS or FONSI should reflect consultation with the appropriate agencies and provide reasonable assurance that the requirements will be met. Approval of the environmental document constitutes adoption of any Administration findings and determinations that are contained therein."

6 FHWA, "Clarification of Transportation Conformity Requirements for FHWA/FTA Projects Requiring Environmental Impact Statements" (May 20, 2003).

7 FHWA, "Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents" (Oct. 18, 2016) ("MSAT Guidance").

8 42 USC 7506(c).

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A conformity determination typically involves analyses and findings made at both the regional and project level. Conformity requirements must be met prior to completion of the NEPA process, so any delay in satisfying those requirements could delay completion of the NEPA process. In addition, a NEPA document normally summarizes the applicable conformity requirements and shows that those requirements have been met. Therefore, a basic understanding of regional and project-level conformity is essential to preparing adequate NEPA documentation.

National Ambient Air Quality Standards (NAAQS). Established by the U.S. Environmental Protection Agency (EPA), the NAAQS specify the maximum allowable ambient concentrations for specific pollutants. To date, EPA has established NAAQS for six pollutants, commonly known as "criteria pollutants."[9] Transportation sources contribute to four of the six criteria pollutants:

- Particulate matter ($PM_{2.5}$ and PM_{10})
- Carbon monoxide (CO)
- Ozone
- Nitrogen dioxide (NO_2)[10]

There are multiple NAAQS for some pollutants. For example, for particulate matter, there are standards for PM_{10} (inhalable particles with diameters that are generally 10 micrometers and smaller) and for $PM_{2.5}$ (fine inhalable particles with diameters that are generally 2.5 micrometers and smaller). Furthermore, $PM_{2.5}$ has both an annual standard and a 24-hour standard.

EPA is required to reassess each NAAQS for each pollutant periodically and update the standard if justified based on the latest scientific information regarding the effects of the pollutant on human health and welfare.[11] The process for updating a NAAQS typically takes several years and includes public notice and an opportunity for public comment.

Nonattainment and Maintenance Areas. For each NAAQS, EPA designates specific geographic areas—known as "nonattainment areas"—in which air quality conditions exceed the level specified by that NAAQS.[12] If a nonattainment area comes into compliance with a NAAQS, the state can request EPA to redesignate it as attainment. If redesignated as attainment, the area is required to develop a plan to maintain the standard for 20 years. Once redesignated, the area is then called a "maintenance area."[13] As with the NAAQS themselves, EPA makes nonattainment and maintenance designations through a public notice-and-comment process. Designations of nonattainment and maintenance areas are made separately for each criteria pollutant and each NAAQS. Therefore, the same region may be in "nonattainment" status for one pollutant, "maintenance" for another, and attainment (or unclassified) for others. In addition, there may be multiple NAAQS for the same pollutant, so the same region could be in nonattainment for one NAAQS and in attainment for another NAAQS for the same pollutant.

State Implementation Plan (SIP). For each nonattainment area, the state must prepare a State Implementation Plan (SIP) that includes specific actions for achieving the applicable NAAQS.[14] States also are required to prepare SIPs for maintenance areas, demonstrating how the state will continue to maintain compliance with the NAAQS.[15] A separate SIP is prepared for each pollutant for which the area is in nonattainment or maintenance. As a result, a state may have multiple SIPs for the same geographic area, and at any given time, the SIPs may be in various stages of EPA approval process.[16] The state air quality agency is responsible for preparing the SIP, and each SIP must be approved by EPA. For each pollutant, the SIP includes a motor vehicle emissions budget and may also include transportation control measures:

- **Motor vehicle emissions budget.** The SIP defines the total allowable level of emissions of a specific pollutant, and then allocates a portion of that total to emissions from highway and transit vehicles.[17] The allowable emissions level set for highway and transit vehicles is known as the motor vehicle emissions budget.

9 Current NAAQS are available at: https://www.epa.gov/criteria-air-pollutants/naaqs-table.

10 The other two criteria pollutants are sulfur dioxide (SO_2) and lead.

11 42 USC 7408(c), 7409(d).

12 42 USC 7407(d).

13 42 USC 7505A.

14 42 USC 7407(a).

15 42 USC 7505A.

16 EPA lists the status of each state's SIPs on its web site: https://www3.epa.gov/airquality/urbanair/sipstatus/reports/map_s.html.

17 40 CFR 93.101.

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- **Transportation control measures.** The SIP may include specific projects and programs that the state has committed to implement to reduce emissions from transportation sources—for example, improving public transportation or adding high occupancy vehicle (HOV) lanes.[18] These commitments are known as transportation control measures (TCMs).

States also develop another type of SIP called a "conformity SIP."[19] A conformity SIP includes the interagency consultation processes and procedures that must be used in the development of transportation conformity determinations. Certain elements of the air quality analyses and project-level conformity determination are defined by those procedures.

Conformity Requirement. Federal agencies are required to make a conformity determination before adopting, accepting, approving, or funding an activity or project located in a nonattainment or maintenance area. A conformity determination is a finding that the activity or project (1) conforms to the SIP's purpose of "eliminating or reducing the severity and number of violations" of the NAAQS and "achieving expeditious attainment of the NAAQS" and (2) the project or activity will not:

- cause or contribute to any new violation of any standard in any area;
- increase the frequency or severity of any existing violation of any standard in any area; or
- delay timely attainment of any standard or other milestones in any area.[20]

Transportation Conformity. The Clean Air Act establishes a distinct set of conformity requirements for metropolitan transportation plans, transportation improvement programs (TIPs), and transportation projects. Projects funded or approved by FHWA must satisfy these "transportation conformity" requirements in nonattainment and maintenance areas for the transportation-related pollutants (ozone, carbon monoxide, particulate matter, and nitrogen dioxide). The Federal Transit Administration (FTA) is subject to the same transportation conformity requirements as FHWA. Transportation conformity regulations are found in 40 CFR Part 93, Subpart A[21] and 40 CFR 51.390.

Transportation Conformity Determinations for Metropolitan Transportation Plans and TIPs

Transportation conformity requirements apply when metropolitan transportation plans and TIPs in nonattainment and maintenance areas are adopted or updated by a metropolitan planning organization (MPO). The conformity determination for a metropolitan transportation plan or TIP is based on a regional emissions analysis showing that the total emissions projected for the metropolitan area—assuming implementation of all projects in the plan or TIP—conform to the emissions levels allowed for that pollutant in the SIP. Other emission tests are used when there is no SIP for the area.

Project-level analysis must be coordinated with regional conformity determinations in nonattainment and maintenance areas. Also, for a project-level conformity determination to be made, the project must come from a conforming plan and TIP. Therefore, NEPA practitioners should understand the following points regarding regional conformity determinations for plans and TIPs:

Metropolitan Transportation Plans and TIPs. Federal law requires each MPO to carry out a transportation planning process, which includes preparation of a transportation plan and TIP for the metropolitan area.[22] For transportation conformity purposes, it is important to understand a few basic facts about the metropolitan planning process:

- The MPO's transportation plan typically has a time horizon of at least 20 years, while the TIP is required to cover only the first four years of that period.
- The plan and TIP must be updated at least once every four years in nonattainment and maintenance areas and can be amended at any time. An update involves a comprehensive review, whereas an amendment may involve a more limited change, sometimes involving just a single project.
- The plan and the TIP must be consistent with one another. Therefore, updates and amendments to the plan and TIP generally occur at the same time.
- A new conformity determination is required each time a plan or TIP is updated or amended, unless the amendment solely involves exempt projects. (See Exempt Projects, below.)

18 40 CFR 93.101.

19 40 CFR 51.390, 40 CFR 93.105. See also EPA's "Guidance for Developing Transportation Conformity SIPs" (Jan. 2009).

20 42 USC 7506(c).

21 Other Federal agencies, including the Federal Railroad Administration and Federal Aviation Administration, must comply with a different set of conformity requirements, known as "general conformity." See 40 CFR Part 93, Subpart B.

22 See 23 CFR Part 450.

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Projects Included in Regional Emissions Analysis. A regional emissions analysis for a transportation plan or TIP must include emissions from all "FHWA/FTA projects" (projects funded or approved by FHWA or FTA) as well as any other "regionally significant projects" regardless of funding source.[23] A regionally significant project is a project on a facility that "serves regional transportation needs" and "would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel."[24]

Pollutants Considered. A regional emissions analysis is required for each transportation-related criteria pollutant and NAAQS for which the region is in nonattainment or maintenance status. For example, if the region has been designated nonattainment for the 2008 ozone standard and maintenance for the 2006 $PM_{2.5}$ standard, the regional conformity analysis would be required for both of those pollutants and NAAQS.

Interagency Coordination Process. The transportation conformity regulations require an interagency coordination process, which includes EPA and the state agency responsible for air quality, as well as FHWA and FTA, the state DOT, the MPO, and others.[25] This coordination process addresses issues concerning the technical aspects of the regional emissions analysis, including modeling, methodology, and population growth assumptions. Interagency consultation procedures must be carried out in accordance with consultation procedures adopted by the state in its conformity SIP; the procedures must meet criteria specified in the transportation conformity regulations.

Regional Emissions Analysis. In general, a regional conformity determination requires analysis showing that on-road mobile-source emissions of a pollutant—taking into account all of the projects in the plan and TIP, together with the existing transportation network—will not exceed the motor vehicle emissions budget established in the applicable SIP for that pollutant and NAAQS. In situations where an approved SIP is not in place, a regional conformity determination can be based on an analysis showing that implementation of the projects in the plan and TIP will not worsen emissions of the pollutant by comparison to a baseline scenario in which those projects were not implemented.[26] A conformity determination also requires a finding that the state is implementing any TCMs in accordance with the SIP and that the interagency procedures were followed.

Responsibility for Conformity Determination. The regional conformity determination for a metropolitan plan and TIP is made initially by the MPO; the final determination is made jointly by FHWA and FTA.

Frequency. A regional conformity determination must be made for a plan and TIP at least once every four years.[27] This regional conformity determination typically occurs concurrently with the update to a transportation plan and TIP, which also must occur at least once every four year years in nonattainment and maintenance areas. As noted above, a conformity determination is also required whenever plans and TIPs are amended with nonexempt projects.[28] Many MPOs make conformity determinations annually or even more often in connection with plan and TIP amendments.[29]

Latest Planning Assumptions. A regional conformity determination must be based on the latest planning assumptions in effect at the time the conformity analysis begins, as determined through the interagency consultation process.[30] Planning assumptions involve issues such as population, employment, travel, public transit usage, and implementation of measures to reduce transportation-related emissions.

Latest Emissions Model. A regional conformity determination also must be based on the latest emissions model specified by EPA for use in conformity analyses.[31] When a new model is introduced, EPA provides a grace period before that model is required to be used in conformity analyses. As of publication of this Handbook, the current EPA-approved emissions model for on-road mobile sources is the MOVES model, except in California, where a different model (EMFAC, short for EMissions FACtor) is used.

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23 40 CFR 93.122.

24 40 CFR 93.101.

25 See 40 CFR 93.105.

26 40 CFR 93.119.

27 40 CFR 93.104(a).

28 The term "nonexempt" refers to projects for which a conformity determination is required. Projects exempt from all conformity requirements are listed in 40 CFR 93.126. Projects exempt from regional but not project-level conformity requirements are listed in 40 CFR 93.127.

29 An "administrative modification" to a transportation plan or TIP does not require a conformity determination. For a definition of the term "administrative modification," refer to 23 CFR 450.104.

30 40 CFR 93.110.

31 40 CFR 93.110.

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Fiscal Constraint. The regional conformity determination must be based on the same set of projects that are included in the fiscally constrained portion of the MPO's plan and/or TIP.[32] The term "fiscal constraint" means that sufficient funding is reasonably expected to be available to pay for the projects over the time period covered in the plan and TIP.[33] An MPO must make a new fiscal constraint determination each time the plan or TIP is updated, in addition to making a conformity determination.[34]

Conformity Lapse. If an MPO fails to make a conformity determination on its plan or TIP within the four-year period as required by the Clean Air Act, the MPO enters a one-year "conformity lapse grace period." If the conformity determination is not made within that period, the MPO area enters a "conformity lapse"—a status that essentially means the MPO is out of compliance with conformity requirements. When a conformity lapse occurs, only certain projects in the area can proceed, thereby affecting implementation of most transportation projects in the MPO area—except for certain safety-related and non-capacity-expanding projects. A conformity lapse is a relatively rare occurrence, and generally results when there is an impasse on some over-arching policy issue within the governing body of the MPO or between the MPO and other agencies. During a conformity lapse grace period, a project-level conformity determination can proceed if the project came from a previously conforming plan and TIP. However, during a conformity lapse, no project-level conformity determination can be made. For an individual project, it is important to be aware of a potential conformity lapse because it could delay a needed plan or TIP amendment, which in turn could delay completion of the NEPA process for the project.

Projects Located in "Donut Areas" and "Isolated Rural Nonattainment Areas." Most nonattainment and maintenance areas include all or part of an MPO, which makes it possible for regional air quality conformity requirements to be addressed as part of the metropolitan planning process. There are two types of nonattainment and maintenance areas that are located outside MPO boundaries:

- **Donut Areas.** A donut area is a geographic area outside a metropolitan planning area boundary, but inside the boundary of a nonattainment or maintenance area that contains any part of a metropolitan area(s).
- **Isolated Rural Nonattainment and Maintenance Areas.** An isolated rural nonattainment or maintenance area is a geographic area that does not contain or is not part of any metropolitan planning area designated under the transportation planning regulations. Isolated rural areas do not have Federally required metropolitan transportation plans or TIPs and do not have projects that are part of the emissions analysis of any MPO's metropolitan transportation plan or TIP. Projects in such areas are instead included in statewide transportation improvement programs.

Special conformity requirements apply to nonexempt projects located in donut areas and isolated rural nonattainment and maintenance areas. The interagency consultation process is used to determine the approach used to demonstrate conformity for projects in these areas.[35]

Transportation Conformity Determinations for Projects

Transportation conformity requirements must be met before FHWA or FTA can fund or provide any approvals for an individual highway or transit project, unless the project is exempt from conformity requirements.[36] NEPA practitioners should understand the following points regarding project-level conformity:

Elements of Project-Level Conformity Determination. A project-level conformity determination addresses consistency with regional conformity determinations, and, where necessary, localized emissions.[37] The project-level conformity determination must demonstrate that:

(1) the project is included in the currently conforming transportation plan and TIP for the metropolitan area, and

(2) where applicable, the project will not cause any localized exceedances of the NAAQS as determined by a project-specific hot-spot analysis.

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32 40 CFR 93.108 and 23 CFR 450.

33 23 CFR 450.104.

34 23 CFR 450.104.

35 40 CFR 93.105(c).

36 The term "nonexempt" refers to projects for which a project-level conformity determination is required. Generally, exempt projects are those that maintain existing transportation facilities, improve public transit, or otherwise have neutral or positive effects on air quality. If a project is exempt, no project-level conformity determination is required. See 40 CFR 93.126.

37 40 CFR 93.109(b).

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Consistency with Regional Analysis. A project-level conformity determination requires that the project is included in the currently conforming metropolitan plan and TIP. The project as approved in the NEPA process must be "consistent in design concept and scope" with the project definition that was used in the regional conformity analysis for the plan and TIP.[38] This requirement means that if the project has changed significantly since the regional conformity determination was made, it may be necessary for the MPO and FHWA to make a new conformity determination on the metropolitan plan and TIP that include the changed project before a project-level conformity determination is made.

Need for Hot-Spot Analysis. A project-level conformity determination may also require a hot-spot analysis for CO, PM_{10}, and/or $PM_{2.5}$.[39]

A CO hot-spot analysis may be required as part of the project-level conformity determination if the project is in a CO area and is not exempt from conformity requirements (see "Exempt Projects" below).

A CO hot-spot analysis may be quantitative or qualitative under certain circumstances. Under the conformity regulations, a quantitative hot-spot analysis is required if the project meets certain criteria defined in the conformity regulations relating primarily to the presence of congested intersections. In PM_{10} and $PM_{2.5}$ areas, hot-spot analysis must be quantitative. A quantitative PM hot-spot analysis is required as part of the project-level conformity determination if the project meets certain criteria defined in the conformity regulations relating primarily to the number of diesel vehicles.[40] A project that requires a PM_{10} and $PM_{2.5}$ hot-spot analysis is referred to as a "project of air quality concern."

Construction-Related Emissions for Hot-Spot Analysis. A CO, PM_{10}, or $PM_{2.5}$ hot-spot analysis must consider emissions increases from construction-related activities only if analyses occur during the construction phase and last more than five years at any individual site. For most projects, construction emissions would not be included in CO, $PM_{2.5}$, or PM_{10} hot-spot analyses because construction at an individual location normally is completed in less than five years.

Methodology for Hot-Spot Analysis. A hot-spot analysis is used to determine whether a project will cause or contribute to a localized exceedance of the NAAQS for CO, PM_{10}, or $PM_{2.5}$. EPA has issued detailed regulations and guidance regarding the methodologies to be used for conducting hot-spot analyses. These analyses must closely follow the methodology prescribed in the EPA regulations and guidance.[41]

Public Review and Comment. FHWA must make a draft conformity determination, including supporting analysis, available to the public for review and comment before the final conformity determination is approved. The conformity regulations do not specify a minimum amount of time for this public review, but FHWA typically allows a comment period of 30 days or more. This comment period may run concurrently with the comment period on a NEPA document.

Documentation. Analyses to support the project-level conformity determination are often documented in a technical report, which may be included as an appendix to the NEPA document. The findings of the project-level conformity determination normally are summarized in the NEPA document itself. See the Practical Tips section and Appendix A of this Handbook for recommendations on specific points to include in this documentation.

Timing. For a project involving an EIS, the conformity analysis normally is included in the Final EIS and conformity must be determined before the ROD is issued. For a project involving an EA, the conformity determination normally is made before the FONSI is issued. For a project involving a CE, the conformity determination normally is documented concurrently with approval of the CE. In any case, the project-level conformity determination must be made before the first time FHWA adopts, accepts, approves, or funds the project.

Redetermination of Conformity. In some cases, it is necessary for FHWA to redetermine conformity following the completion of the NEPA process. The need for a new conformity determination arises when (1) there is a significant change in the project's design concept or scope; (2) more than three years have elapsed since project approval without major steps to advance the action, such as starting final design or acquiring a significant portion of right-of-way; or (3) a supplemental EIS has been initiated to address air quality issues.[42]

38 40 CFR 93.115(b).

39 40 CFR 93.116.

40 40 CFR 93.123.

41 For guidance on hot-spot analyses, refer to https://www.epa.gov/state-and-local-transportation/project-level-conformity-and-hot-spot-analyses.

42 40 CFR 93.104(d)

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NEPA Assignment. Under the full NEPA assignment program in 23 U.S.C. 327, the U.S. Department of Transportation (U.S. DOT) may assign, and a state may assume, the U.S. DOT's responsibilities under NEPA and certain other Federal environmental laws. However, approval of a conformity determination cannot be assigned to a state under the full assignment program. Therefore, in a state that assumed FHWA's responsibilities under 23 U.S.C. 327, the FHWA still is responsible for making project-level (as well as regional) conformity determinations. By contrast, the responsibility for making project-level conformity determinations can be assigned to a state under 23 U.S.C. 326, which authorizes assignment of U.S. DOT's responsibilities for projects that qualify for CEs.

Exempt Projects. Some projects are exempt from transportation conformity requirements, due to their low potential to contribute emissions of criteria pollutants. Exempt projects may proceed to implementation without being included in a regional or a project-level conformity determination. Many safety-related and maintenance projects are exempt from conformity requirements. For a list of projects that are exempt from all conformity requirements, refer to 40 CFR 93.126. Safety-related and maintenance projects that are not on this list are addressed through interagency consultation on a case-by-case basis. For a list of projects that are exempt from regional emissions analysis but still require project-level analysis, refer to 40 CFR 93.127.

Mobile Source Air Toxics (MSAT) Analysis in NEPA Documents

Mobile Source Air Toxics (MSATs) are Hazardous Air Pollutants (HAPs) that are associated with mobile source emissions. HAPs are pollutants identified by EPA as known or suspected to cause cancer or other serious health effects.

MSATs are of concern because of the potential health effects from inhalation exposure, especially for populations in proximity to major roadways. EPA identified nine compounds based on the magnitude of their emissions and the potential impacts to human health, that FHWA recommends be modeled as part of the MSAT emissions analysis, including benzene, diesel particulate matter, and polycyclic organic matter. MSATs are not criteria pollutants, so they are not subject to air quality conformity requirements. Instead, MSAT emissions are considered as part of FHWA's analysis of air quality impacts to meet NEPA requirements.[43]

FHWA Interim Guidance on MSATs. FHWA has issued and periodically updated interim guidance on the consideration of MSAT emissions in the NEPA process.[44] This interim guidance establishes three categories of projects and requires a different level of consideration of MSAT emissions for projects in each category:

- **Category 1: Projects with No Potential for Meaningful MSAT Effects.** This category includes (1) projects that are categorically excluded from NEPA review under 23 CFR 771.117; (2) projects that are exempt from the conformity requirements under 40 CFR 93.126; and (3) other projects with no potential for meaningful impacts on traffic volumes or vehicle mix. For projects in this category, no MSAT analysis is needed. If an EA or EIS is prepared for a project in this category, it should document the basis for the determination of "No Potential for Meaningful Impacts" and provide a brief description of the factors considered in making that determination.
- **Category 2: Projects with Low Potential for Meaningful MSAT Effects.** For projects in this category, the guidance recommends a qualitative assessment of MSAT emissions in the NEPA document. The qualitative assessment discusses, in comparative form, the potential effect of the alternatives, including the "No Action" alternative, on traffic volumes, vehicle mix and traffic routing, and the associated changes in MSAT emissions. The NEPA document also includes national trend data regarding MSAT emissions. This category includes a broad range of projects that improve operations of highway, transit, or freight facilities without adding substantial new capacity.
- **Category 3: Projects with Higher Potential for Meaningful MSAT Effects.** For projects in this category, the guidance recommends a quantitative analysis of MSAT emissions, which is coordinated with the Office of Natural Environment and the Office of Project Development and Environmental Review in FHWA Headquarters. This quantitative analysis includes a comparison of MSAT emissions under each of the alternatives, including the "No Action" alternative. The quantitative analysis must be developed using the current EPA-approved emissions model. This analysis may also include consideration of cumulative impacts on MSAT emissions. Projects in this category must be located in proximity to populated areas and either (1) create or significantly alter a major intermodal facility with a high potential for concentrations of diesel particulate matter or (2) create new capacity or add significant capacity to urban highways with annual average daily traffic in the range of 140,000 to 150,000 or higher.[45]

43 For an overview of MSATs, refer to www.epa.gov/mobile-source-pollution.

44 FHWA, "Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents." (Oct. 18, 2016) ("MSAT Guidance"). https://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/index.cfm.

45 FHWA, MSAT Guidance, pp. 6–7.

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For projects in Category 2 and Category 3, the interim guidance also recommends the inclusion of a finding that it would not be useful to include an assessment of the project-specific impacts of MSAT emissions on human health, due to the limitations of existing scientific techniques, tools, and data.[46] This finding is made pursuant to a provision in the CEQ regulations that applies when information regarding a reasonably foreseeable impact is "insufficient or unavailable."[47]

The interim guidance also states that, as the science progresses, FHWA will continue to revise and update the guidance.

Greenhouse Gas Emissions Analysis in NEPA Documents

As noted in the Background Briefing, FHWA does not have guidance on addressing GHG emissions in NEPA documents. The decision on whether to include a GHG emissions analysis in a NEPA document will be made by Federal agencies on a case-by-case basis. If a GHG emissions analysis is not included in a NEPA document, it may be prudent to include a general discussion of climate change and an explanation of the reasons that a GHG emissions analysis was not included.

State Requirements

If a state has air quality analysis requirements separate from the Federal requirements, these should be addressed or incorporated by reference in the NEPA document. Federal regulations state that a Final EIS or FONSI should document compliance with requirements of all applicable environmental laws, Executive Orders, and other related requirements.[48]

Key Issues to Consider

The level of air quality documentation will depend on several factors. The following questions are important to consider when determining the documentation needs for air quality analysis.

Determining Applicability of Air Quality Requirements

- Is the project located in a nonattainment area and/or a maintenance area?
  - If so, for which specific pollutants?
  - What is the status of the SIP for each pollutant?
- If located in a nonattainment or maintenance area, is the project subject to transportation conformity requirements?
  - Does the project require FHWA approval or funding?
  - Is the project of a type that is exempt from conformity requirements?
- What type of MSAT analysis is recommended?
  - No analysis for projects with no potential for meaningful MSAT effects;
  - Qualitative analysis for projects with low potential MSAT effects; or
  - Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.
- Do construction emissions warrant discussion?
- Are there indirect and cumulative impacts that should be considered?
- Are there disproportionately high and adverse air quality impacts on the health or environment of minority and low-income populations?
- Does the project involve components that are subject to general conformity—e.g., elements subject to approval by Federal agencies other than FHWA and FTA?
- Should the interagency consultation process be used to reach agreement on these questions?

46 FHWA, MSAT Guidance, p. 7.

47 40 CFR 1502.22(b).

48 23 CFR 771.133.

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Coordinating Project-Level Conformity with Regional Conformity Determinations

- Is the project included in a conforming plan and TIP?
  - If so, is the project as defined in the NEPA document "consistent in design concept and scope" with the project as defined in the metropolitan area's plan and TIP?
- What actions, if any, must the MPO take in order for the NEPA process to be completed for the project—e.g., does the MPO need to amend the plan and TIP to include the project? If so, when will that action occur?
- Is there agreement on which air quality model to use and the assumptions to be made in the air quality model?
- What is the expected timing of the regional conformity determination and related MPO approvals for the plan and TIP, and how do those relate to the schedule for the NEPA process?
- Is the project located in a donut area or isolated rural nonattainment or maintenance area? If so, how will conformity in those areas be addressed?

Determining Need for Hot-Spot Analyses

CO Hot-Spot Analyses

- Is the project in a CO nonattainment or maintenance area?
- If not exempt, does the project meet the criteria for FHWA's CO categorical hot-spot finding?
- If the categorical hot-spot finding does not apply, when will the project-specific CO hot-spot analysis be performed?
- When should the interagency consultation process begin to reach agreement on issues related to models, methods, and assumptions?

PM Hot-Spot Analyses

- Is the project in a $PM_{2.5}$ or PM_{10} nonattainment or maintenance area?
- If not exempt, is the project a project of air quality concern?
- If the project is a project of local air quality concern, when will the project-specific PM hot-spot analysis be performed?
- When should the interagency consultation process begin to reach agreement issues related to models, methods, and assumptions?

Documenting Air Quality Issues in a NEPA Document

- Does the NEPA document accurately summarize applicable regulatory requirements, including conformity requirements? Is it clear which analyses are being completed to meet CAA/conformity requirements vs. NEPA requirements?
- Does the NEPA document accurately describe the air quality status of the project area, including any nonattainment or maintenance area designations, as well as any recent or anticipated changes in status?
- Does the NEPA document describe the models, methodologies, and data sources used in air quality analyses for transportation conformity and NEPA purposes?
- Is the air quality data and related information (such as traffic data) consistent with data and information used in other sections of the NEPA document? If there are differences, are they appropriately explained?
- Are air quality impacts addressed, as appropriate, as part of the discussion of direct, indirect, and cumulative impacts of the alternatives?
- Does the NEPA document include the appropriate MSAT analysis, consistent with FHWA's interim guidance for consideration of MSAT emissions in the NEPA process?
- Will a qualitative or quantitative GHG emissions analysis be performed?
- Are the conclusions of the air quality analysis explained in easy-to-understand terms and presented visually or graphically when applicable?

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- Is the air quality documentation consistent with standard practices or requirements specified in applicable state guidance?
- Have all applicable state requirements been explicitly addressed and documented?
- Has public and agency coordination been completed and documented?

Updating Air Quality Analyses after Completion of the NEPA Process

- Is there any new information about air quality impacts that requires preparation of a reevaluation or supplemental EIS?
- Have there been changes in regulations or project design since completion of the NEPA process that require redetermination of air quality conformity?

Practical Tips

This section presents tips for documenting air quality analyses for highway projects that require NEPA compliance by FHWA. This section also addresses the coordination of air quality conformity requirements with the NEPA process.

1 | Determining Applicability of Air Quality Requirements

Air quality analyses must be coordinated with other steps in the NEPA process, so it is important to determine as early as possible which requirements apply and the actions that will be needed to satisfy those requirements. This initial assessment should consider air quality conformity regulations, FHWA's MSAT guidance, and the importance of GHG emissions.

Air Quality Status of Project Area. An important early step is to ascertain whether the proposed project (including any alternative under consideration in the NEPA process) is located in any nonattainment or maintenance area and, if so, for which specific pollutants. Conformity requirements only apply in nonattainment and maintenance areas. EPA maintains a complete, current listing of nonattainment and maintenance area designations on its web site; this listing is known as the Green Book.[49] Because designations may change, project sponsors also should check with air quality specialists to determine whether the area's status is expected to change during the course of the NEPA process. Potential relevant changes in status could include:

- Designating a new nonattainment area for a NAAQS.
- Reaching the end of the 20-year maintenance period. Once a maintenance area has reached the end of the 20-year period, conformity requirements no longer apply.[50]
- Other actions by EPA, such as revoking a NAAQS.

Applicability of Conformity Exemption. The project team should determine as early as possible whether the project is exempt from transportation conformity requirements. The criteria for exemptions are specified in the conformity regulations at 40 CFR 93.126 and 40 CFR 93.127. Exempt projects include shoulder improvements, guardrail and median barrier installation, pavement resurfacing and marking, lighting improvements, and many other project types that have little or no potential to affect emissions of criteria pollutants. If a project is exempt under 40 CFR 93.126, no regional or project-level conformity determination is required.[51] NEPA analysis of air quality impacts is still required, but typically is minimal for a project that is exempt from conformity requirements.

Status of Project in Applicable MPO Plan and TIP. For nonexempt projects, it also is important to determine whether the project is included in the currently conforming metropolitan transportation plan and TIP and if so, whether it is consistent in design concept and scope with the project description in the plan and TIP.

49 The Green Book is available at https://www.epa.gov/green-book.

50 For guidance on when transportation conformity requirements end for maintenance areas, refer to http://nepis.epa.gov/Exe/ZyPDF.cgi/P100KPP0.PDF?Dockey=P100KPP0.PDF.

51 It is important to note that certain projects are exempt from regional conformity emissions analysis only and a project-level conformity determination is still required per 40 CFR 93.127. Additional exemptions are provided in 40 CFR 93.128 and 93.129.

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Need for Project-Level Conformity Analysis. For nonexempt projects, the project team must also consider the need for a hot-spot analysis as part of the project-level conformity determination. Under the conformity regulations, hot-spot analyses are required for projects in CO areas and may be required in $PM_{2.5}$, and PM_{10} areas for the relevant pollutant(s). In PM areas, interagency consultation may be needed to determine if a hot-spot analysis is needed. If a hot-spot analysis is needed, that analysis will need to be performed after basic project design and operational elements have been determined. See Background Briefing, above, for a list of factors to consider in determining whether a hot-spot analysis is needed.

Need for MSAT Analysis. The project team should assess what level of MSAT emissions analysis is required and whether that analysis will be qualitative or quantitative. Keep in mind that, if the project is exempt from conformity requirements, it also will be considered a project with minimal or no potential for meaningful MSAT emissions, and therefore a quantitative MSAT emissions analysis will not be recommended. See Background Briefing for a list of the three categories of projects defined in the MSAT guidance and the analyses recommended for each.

Applicability of General Conformity. As noted above, there are two distinct sets of conformity requirements: transportation conformity, which applies to FHWA and FTA projects, and general conformity, which applies to all other actions taken by Federal agencies, including other modal administrations within the U.S. DOT. For multimodal projects, both a transportation conformity determination and a general conformity determination may be required. For such projects, the project team should use the interagency consultation process to determine the steps needed to satisfy general conformity in addition to transportation conformity requirements.[52]

2 | Coordinating Project-Level Conformity with Regional Conformity Determinations

For nonexempt projects located in a nonattainment or maintenance area for one or more pollutants, the project will need to be included in the MPO's transportation plan prior to completion of the NEPA process.[53] Moreover, as noted above, the project as approved in the NEPA process will need to be "consistent in design concept and scope" with the project as defined in the regional conformity analysis for the plan and TIP. Therefore, the project team should determine early in the NEPA process whether a plan and/or TIP amendment will be needed and assess when those actions are likely to occur in relation to other events in the project schedule.

Consistency with Description in Plan and TIP. At the outset of the NEPA process, the project team should assess whether the project will require an amendment to the plan or TIP prior to completion of the NEPA process. This assessment should consider the following questions:

- Is the project already included in the fiscally constrained plan and TIP (not just included as an illustrative project)?
- If the project is included in the fiscally constrained plan and TIP, what specific phases of the project are included—e.g., only the preliminary engineering phase, or also construction?
- How is the project described in the plan and TIP—e.g., what do the plan and TIP say regarding the project's termini, facility type, purpose, funding source, etc.?
- What cost estimate is provided for the project in the applicable plan and TIP? Is it consistent with the cost estimates that are being used in the NEPA process?
- Are the plan and TIP consistent with one another in their description of the proposed project? (The plan and TIP are required to be consistent, but check to confirm.)
- What specific year or years are identified for project construction in the plan and TIP? Are those assumptions consistent with the schedule assumed in the NEPA document?

Answers to these questions will provide a starting point for determining the specific actions (if any) that will need to be taken by the MPO during the NEPA process, including the need for a plan and/or TIP amendments and associated fiscal constraint and conformity determinations.

Schedule for Upcoming Plan and TIP Actions. Understanding the MPO's schedule for plan and TIP actions will be helpful in coordinating the MPO's actions with the schedule for the NEPA process. Early coordination with the MPO should address issues such as:

52 See FHWA, "Transportation and General Conformity Frequently Asked Questions" (April 6, 2011).

53 See FHWA, "Transportation Planning Requirements and Their Relationship to NEPA Approvals" (Feb. 9, 2011). In addition, under FHWA guidance, at least one project phase must be included in the MPO's TIP prior to completion of the NEPA process.

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- Does the MPO face any upcoming deadlines for action, such as the need to adopt a new plan or TIP to meet the four-year deadline for updates to those documents?
- Are there other factors that may require the MPO to undertake a new regional conformity determination for the plan and TIP—e.g., designation of a new nonattainment area, or the adoption of a revised SIP with a new motor vehicle emissions budget?
- If the MPO is planning to make a new regional conformity determination for the plan and TIP, what is the anticipated schedule for the regional emissions analysis for those actions?

Incorporation of MPO Actions into NEPA Project Schedule. The NEPA project schedule should include any actions that the MPO will need to take prior to completion of the NEPA process, including updates or amendments to the applicable plan and TIP and associated conformity determinations. In developing this schedule, keep in mind that the lead time required for MPO actions may be lengthy, sometimes six months or more, to allow sufficient time for air quality modeling and fiscal constraint analyses to be completed and for the required public involvement opportunities to be provided. Moreover, it may not be possible to specify the plan or TIP amendment needed by the MPO until a preferred alternative is identified in the NEPA process, so it is possible that the MPO's action will need to occur in the later stages of the NEPA process. Careful advance planning can help to ensure that the MPO's actions do not delay the timely completion of the NEPA process.[54]

Coordination in Isolated Rural Nonattainment or Maintenance Area. Isolated rural nonattainment or maintenance areas, by definition, do not contain or are not part of any metropolitan planning area served by an MPO. Therefore, projects in these areas must be included in a statewide transportation plan or statewide TIP, rather than a metropolitan transportation plan or TIP. The coordination requirements between project-level conformity and regional conformity described in this section also apply to projects in these areas. The transportation conformity regulation states that references to "transportation plan" or "TIP" should be taken to mean those projects in the statewide transportation plan or statewide TIP, and references to "MPO" should be taken to mean the state department of transportation.[55]

3 | Conducting Hot-Spot Conformity Analyses in the NEPA Process

The following tips are intended to help practitioners complete any required hot-spot analyses without delaying the overall schedule for the NEPA process. Because the requirements for CO and PM hot-spot analyses are distinct, they are addressed separately in this section.

CO Hot-Spot Analyses

For nonexempt projects located in CO nonattainment or maintenance areas, a CO hot-spot analysis may be required. For such projects, the project team should consider whether FHWA's categorical CO hot-spot finding applies. If that finding does not apply, the team should consider the type of CO hot-spot analysis needed, and ensure that any such analysis is carried out and documented in accordance with the detailed requirements provided in EPA regulations and guidance.

Applicability of Categorical CO Hot-Spot Finding. FHWA has issued a categorical hot-spot finding that applies to urban highway projects that have one or more intersections in CO maintenance areas, except for projects in California.[56] If the criteria specified in the categorical hot-spot finding are met, the project sponsors can rely upon this categorical hot-spot finding instead of conducting a CO hot-spot analysis. Practitioners should refer to the categorical CO hot-spot finding itself to determine whether the criteria are met. Keep in mind that:

- The categorical CO hot-spot finding applies only in CO maintenance areas. It does not apply to PM.
- The categorical CO hot-spot finding does not apply in California.
- Applying the categorical CO hot-spot finding avoids the need for a project-specific CO hot-spot analysis, but the Federal agency still must make a project-level conformity determination for CO, with agency consultation and public involvement. This determination is essentially a finding that the categorical hot-spot determination applies to the project.

54 40 CFR 93.107 states that the degree of specificity required in the transportation plan and the specific travel network assumed for air quality modeling do not preclude the consideration of alternatives in the NEPA process or other project development studies. The conformity rule specifies criteria the project must meet should the NEPA process result in a project with significant changes from the design concept and scope contained in the plan or TIP.

55 40 CFR 93.109(g).

56 FHWA's categorical CO hot-spot finding and associated technical documentation and materials can be found at: https://www.fhwa.dot.gov/environment/air_quality/conformity/policy_and_guidance/cmcf/index.cfm.

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Preparing the CO Hot-Spot Analysis. For projects that are not covered by the categorical CO hot-spot finding, a project-specific CO hot-spot analysis is required. The conformity regulations state that this analysis can include either (1) quantitative methods that represent reasonable and common professional practice or (2) a qualitative consideration of local factors, if this can provide a clear demonstration that the project conforms to the CO NAAQS as provided in 40 CFR 93.116.[57] The state's interagency consultation procedures for conformity determinations should be used to evaluate and choose models and associated methods and assumptions to be used in CO hot-spot analyses. Public involvement may also be required as part of the state's public involvement process for conformity determinations.[58]

Documenting the CO Hot-Spot Analysis. When a project-specific CO hot-spot analysis is prepared, a technical report or other appropriate documentation should be prepared. This documentation should describe the model and methodology used, describe key assumptions made in the analysis, present the key findings, and describe any interagency consultation and public involvement that occurred in connection with the hot-spot analysis. Supporting data should be included in the project file and may be included in an appendix to the technical report for this analysis. For an EIS or EA, it is a good practice to include documentation of the CO hot-spot analysis as an appendix to the NEPA document.

PM Hot-Spot Analyses

For nonexempt projects located in $PM_{2.5}$ or PM_{10} nonattainment or maintenance areas, a PM hot-spot analysis may be required. The need for a PM hot-spot analysis depends on whether the project is considered a project of air quality concern. The interagency consultation process should be used to determine whether a project is considered a project of air quality concern. If a PM hot-spot analysis is required, it must be performed in accordance with EPA's regulations and guidance for PM hot-spot analyses.

Determining if the Project is a Project of Air Quality Concern. A PM hot-spot analysis is required only for specific types of projects, which are listed in the transportation conformity regulations at 40 CFR 93.123(b)(1). In guidance, EPA uses the term "project of air quality concern" to refer to any of the project types for which a PM hot-spot analysis is required. For example, projects of air quality concern include highway projects that involve a significant increase in the number of diesel transit buses and/or diesel trucks.[59] If a project is not a project of air quality concern, then no PM hot-spot analysis is required.

Preparing the PM Hot-Spot Analysis. For a project of local air quality concern, a quantitative hot-spot analysis is required. This quantitative analysis must be based on the current, EPA-approved emissions model and should follow the technical guidance published by EPA for $PM_{2.5}$ or PM_{10} hot-spot analysis.[60] Interagency consultation procedures should be used to ensure that the hot-spot analysis complies with the regulation.

Documenting the PM Hot-Spot Analysis. When a project-specific PM hot-spot analysis is prepared, a technical report or other appropriate documentation should be prepared. As with a CO hot-spot analysis, this documentation should describe the assumptions made in the analysis, present the key findings, and describe any interagency consultation and public involvement that occurred in connection with the hot-spot analysis. Supporting data should be included in the project file and may be included in a technical report for the hot-spot analysis.

4 | Presenting Air Quality Analyses in a NEPA Document

The air quality analysis in a NEPA document should disclose the project's potential air quality impacts while also documenting compliance with the conformity requirements of the Clean Air Act. The level of detail needed to accomplish these two distinct objectives will vary depending on the type of project, the type of NEPA document being prepared, and the analysis needed to satisfy conformity requirements. The tips in this section are intended primarily for projects that involve preparation of an EA or EIS under NEPA and require a conformity determination under the Clean Air Act.

Description of Air Pollutants Considered. Many NEPA documents include a brief background discussion that describes the pollutants considered in the air quality analysis and their potential health impacts. This description identifies, as appropriate, the criteria pollutants and MSATs being analyzed as they relate to the air quality status of the study area.

57 See 40 CFR 93.123(a)(2).

58 See 40 CFR 93.105(e)]

59 EPA, "PM Hot-Spot Analyses: Frequently Asked Questions" (Dec. 2012), p. 3.

60 EPA, "Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas" (Nov. 2015).

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Summary of Regulatory Requirements. The NEPA document normally should include a summary of applicable regulatory requirements for each environmental resource addressed in the impacts analysis. For air quality, this summary of regulatory requirements should include standard language summarizing the air quality conformity requirements under the Clean Air Act. It also should introduce and briefly explain key terms and concepts such as: criteria pollutants, NAAQS, SIP, nonattainment and maintenance areas, and regional and project-level conformity findings.

Existing Conditions (Environmental Baseline). The description of the affected environment in the NEPA document normally should describe the air quality status of the project area, identifying each nonattainment and/or maintenance area within any part of the project area. Precise wording should be used when describing the specific NAAQS for which the area has been designated as nonattainment or maintenance—for example, the "2008 8-hour ozone standard" rather than simply referring to the "ozone standard." This discussion also should describe the current status of the SIP for each pollutant, as well as the deadline for achieving compliance. It may also be useful to mention measures already being taken to help achieve compliance with the NAAQS. If there are significant background factors (such as power plant or manufacturing emissions) that contribute to existing violations of the NAAQS, those factors also should be mentioned.

Environmental Consequences. For an EIS, and to a lesser extent an EA, it is necessary to include a comparative analysis of the environmental impacts of the alternatives. With regard to air quality, this comparative analysis typically includes the results of air quality emissions modeling showing the projected emissions of criteria pollutants and MSATs for each of the action alternatives and for the "No Action" alternative. It also may address construction emissions. In addition, air quality impacts should be considered as appropriate as part of indirect and cumulative impacts analyses. The following information generally should be included in the air quality analysis in a NEPA document:

- *Model, Methodology, and Data Sources.* The NEPA document (or an appendix) should describe the models used in the emissions analyses that are presented in the NEPA document and any important assumptions used in the analyses. Any unusual, difficult, or contentious issues regarding the model or methodology should be explained. For example, if a new emissions model or new data was available but was not used, the NEPA document should explain why it was not used—e.g., because it had not yet been approved for use in a project-level analysis.
- *Criteria Pollutant Emissions.* A comparative analysis of criteria pollutant emissions helps to inform the comparison of alternatives by showing whether there are notable differences among the alternatives in their emissions of criteria pollutants and which alternatives would meet air quality conformity requirements. This analysis may include a PM and/or CO project-level analysis for each of the alternatives, in addition to regional emissions analysis.[61] Keep in mind that this type of comparative analysis, when performed, is part of the agency's compliance with NEPA; the Clean Air Act requires a conformity determination for the selected alternative, not a comparative analysis of the various alternatives considered.
- *MSAT Emissions.* For a project classified as Category 3 ("higher potential for MSAT emissions") under FHWA's interim guidance on MSATs, the NEPA document also should include a quantitative MSAT emissions analysis. This analysis involves presenting the total MSAT emissions for each of the action alternatives and the "No Action" alternative. It is accompanied by a general discussion of MSAT emission trends as provided in FHWA's interim guidance. If the project is classified as Category 2 ("low potential for meaningful MSAT emissions"), the environmental consequences chapter should simply include a qualitative discussion of MSAT emissions as provided in FHWA's interim guidance. See Background Briefing, "Mobile Source Air Toxics Analysis in NEPA Documents."
- *Construction Emissions.* In some cases, a NEPA document also includes a discussion of potential air quality emissions during the construction phase. This discussion typically is qualitative and often includes a discussion of potential measures to minimize and mitigate construction emissions.
- *Indirect and Cumulative Impacts.* Air quality should be considered, along with other environmental impacts, when developing an analysis of indirect and cumulative impacts. The decision about whether to address air quality specifically in such an analysis should be made on a case-by-case basis. For example, if a project is expected to induce development, and that development will generate additional pollutant air emissions, those emissions could be considered an indirect effect of the project. In addition, if a project is located in an area where air quality is being adversely affected by several other past, present, or reasonably foreseeable planned projects that will be implemented in the same time frame, the combined effects of those projects should be addressed in the cumulative impacts analysis.

61 See FHWA, Technical Advisory T6640.8A, "Guidance for Preparing and Processing Environmental and Section 4(f) Documents" (Oct. 30, 1987), Sec. V.G.8.

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Compliance with Transportation Conformity Requirements. In addition to discussing air quality impacts of the alternatives, the final NEPA document also should provide documentation that FHWA has complied with the conformity requirements under the Clean Air Act and has made a project-level conformity determination. Documentation of compliance with conformity requirements typically will include the following steps:

- Describe interagency consultation activities, including consultation with EPA and the state air quality agency in developing the conformity analyses. Give dates of key meetings and events, including important correspondence.
- Identify the metropolitan transportation plan (and, if applicable, TIP) that includes the project, and give the date of the MPO's approval of the plan/TIP as well as the date of FHWA and FTA's approval of the conformity determination for the plan/TIP.
- If a hot-spot analysis was performed (for CO, $PM_{2.5}$, or PM_{10}), summarize the analysis and present the results of the analysis in the NEPA document, showing that the project will not produce any localized exceedances of the NAAQS for those pollutants. Include supporting data in a memorandum or technical report, which normally should be attached as an appendix to the NEPA document and included in the project file.
- If categorical CO hot-spot finding was relied on (for a projects in a CO maintenance area), state the basis for concluding that the categorical determination is applicable to the project and describe any interagency consultation regarding that determination.
- Include a conclusion paragraph with a project-level conformity determination addressing each criteria pollutant for which a conformity determination is required. The wording of the conformity determination should be reviewed by air quality specialists and/or legal counsel to ensure that the intent of the conformity regulation is met.

Reviewing Air Quality Analyses for Clarity and Completeness. Air quality analyses involve complex technical and regulatory issues, which can be difficult to explain clearly for a general audience in a NEPA document. The tips below are intended to assist document preparers in reviewing an air quality analysis for clarity and completeness. Additional suggestions are provided in the checklists in Appendix A.

- **Terminology.** Define important technical terms, and make sure the definitions are clear and easy to find. Call-out boxes provide a useful tool for highlighting definitions of key terms.
- **Addressing Requirements.** Document how applicable Clean Air Act and NEPA requirements were met. Use section headers or other methods to delineate the specific analyses and findings that satisfy NEPA and Clean Air Act requirements.
- **Data.** Review air quality data for consistency with information presented in other sections of the NEPA document, especially those that may involve the same data (e.g., traffic, truck data, and noise). Although cross-checking is time-consuming, it is a valuable effort that enhances the credibility of the document for the public and agency reviewers. Explain any important limitations, inconsistencies, or anomalies in the data.
- **Models and Methodologies.** Identify the specific air quality model version used in developing the air quality analysis, and describe the capabilities and limitations of the model (if relevant to the conclusions presented) in terms understandable to a general reader.
- **Tables.** Use tables where appropriate to present data referenced in the text of the NEPA document. For example, tables are useful when presenting emission totals for each alternative. The text accompanying a table should be used to highlight or explain the data presented in the table, not to repeat all of the same data.
- **Graphics.** Use color and graphics in the environmental document to convey data that may be difficult to understand when presented in a table format. For example, figures can be useful in showing changes in emissions levels over time, boundaries of nonattainment or maintenance areas; locations of air quality monitoring stations; and locations where a hot-spot analysis was performed.
- **Findings.** Ensure that the project-level conformity determination is made with the precise language required in the conformity determination, and that the determination is readily identifiable in the NEPA document (e.g., with a sub-heading to identify the finding).
- **Benefits.** Discuss potential air quality benefits associated with the project, but be sure to avoid over-stating the benefits. Avoid making general assertions about air quality benefits that are not supported by data in the NEPA document.
- **State-Specific Requirements.** Check any state-specific manuals, guidance documents, and checklists to ensure that the air quality analysis is consistent with current practices and requirements for the state in which the project is located.

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Mitigation. The NEPA document normally should describe each mitigation measure, if applicable, in detail. This will identify how and when the mitigation measure is to be implemented, the responsible agency, how the effectiveness of the mitigation measure will be determined, and what actions will take place if the measure is determined to not be effective.

5 | Updating Air Quality Analyses after Completion of the NEPA Process

Following the completion of the NEPA process, it may be necessary to update air quality analyses for compliance with NEPA and the Clean Air Act. In addition, it is possible that a new conformity determination may be required.

Reevaluation and Supplementation under NEPA. As with any environmental issue considered in a NEPA document, FHWA and FTA must assess the significance of any new information or changed circumstances relating to air quality. In some cases, the assessment of significance will require a written reevaluation of the NEPA document as provided in the FHWA/FTA regulations (23 CFR 771.129). Depending on the findings of the reevaluation, a supplemental NEPA document may be required.

New Project-Level Conformity Determination. The conformity regulations state that conformity must be redetermined—that is, a new conformity determination must be made—for an FHWA/FTA project if any of the following has occurred:

- the project's design concept and scope have significantly changed;
- three years have elapsed since the most recent major step to advance the project; or
- a supplemental environmental document is initiated for air quality purposes.[62]

To ensure compliance with this requirement, design plans should be reviewed to determine whether they are consistent with the design concept and scope assumed in the applicable conformity analyses. If they are inconsistent, a new conformity determination is required.

Plan and TIP Updates and Amendments. Even after the NEPA process is completed for a project, the lead agency and project sponsor should closely monitor the status of the plan and TIP that include the project. The plan or TIP may require an update for various reasons. Each time the MPO in a nonattainment or maintenance area updates or amends its plan or TIP, a new regional conformity determination is required, as well as a new fiscal constraint determination.

62 40 CFR 93.104(d). For purposes of this requirement, major steps to advance the project include: completing the NEPA process; starting final design; acquiring a significant portion of the right-of-way for the project; and initiating construction (which includes approval of plans, specifications, and estimates).

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REFERENCE MATERIALS

Statutes, regulations, and guidance documents cited in this Handbook, along with additional materials and sample documents, are available on the AASHTO Center for Environmental Excellence web site, http://environment.transportation.org. Comprehensive listings of transportation conformity guidance can be found on EPA's web site, https://www.epa.gov/state-and-local-transportation and on FHWA's web site, http://www.fhwa.dot.gov/environment/air_quality/conformity/.

Statute and Regulations

42 USC 7506(c)—Clean Air Act conformity provision

40 CFR Parts 51.390 and 93 Subpart A—transportation conformity regulations

Guidance and Overviews of Transportation Conformity

FHWA, "Transportation Conformity: A Basic Guide for State and Local Officials" (2017).

FHWA, "Transportation Conformity Brochure" (2010).

EPA, "Transportation Guidance for Areas Reaching the End of the Maintenance Period" (2014).

Hot-Spot Analyses and Determinations

EPA, "Transportation Conformity Guidance for Quantitative Hot-spot Analysis in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas" (2015).

EPA, "PM Hot-spot Analyses: Frequently Asked Questions" (2012).

EPA. "Using MOVES2014 in Project-Level Carbon Monoxide Analyses" (2015).

EPA "Guideline for Modeling Carbon Monoxide From Roadway Intersections" (1993).

FHWA, "Carbon Monoxide Categorical Hot-Spot Finding" (2014).

Mobile Source Air Toxics

FHWA, "Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents" (2016).

Relationship of NEPA to Transportation Planning

FHWA, "Transportation Planning Requirements and Their Relationship to NEPA Approvals" (2011).

FHWA, "Transportation Planning Requirements and Their Relationship to NEPA Approvals" (2008).

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Appendix A: Checklist for Air Quality Analyses in NEPA Documentation

This checklist is intended for use in developing and reviewing the air quality analysis for a project located in an air quality nonattainment or maintenance area. It also addresses supporting information to be maintained in the project file as back-up for the NEPA document. This checklist provides only a general guide; not all of these items will be applicable to every project.

NEPA Document

Does the NEPA document include:

- Information on the NAAQS and attainment status of the project area for each relevant pollutant, including description of pollutant and known potential health effects
- Status of SIPs for the project area
- Name and date of the transportation plan and TIP
- The date when the transportation plan and TIP were adopted and by whom
- The date when the transportation plan and TIP were approved by FHWA/FTA
- Affected environment
- Discussion of whether proposed projects are exempt from conformity requirements
- Summary of the results of air quality analyses (if applicable)
- Project-level conformity documentation (if applicable)
- MSAT analysis as determined based on FHWA's interim guidance, including required language regarding incomplete or unavailable information under 40 CFR 1502.22.
- Summary of agency and public coordination regarding air quality analysis

Technical Report

Does the technical report include:

- A discussion of the methodology used for the air quality analysis
- Description of the sources of traffic data
- Summary of modeling inputs
- Dispersion modeling details, including inputs and results
- Background concentration data
- Details of emissions calculations for any re-entrained road dust, other emissions, or nearby sources that were included in the analysis
- Emissions tables supporting the graphics used in the text of the NEPA document
- Analysis of any needed mitigation measures and associated written commitments
- Specifics of interagency consultation process

Project File

Does the project file include:

- Traffic data used in MSAT and hot-spot analyses
- Emission model inputs and outputs, along with the version of the emissions model used
- Dispersion model inputs and outputs, along with the version of the dispersion model used
- Spreadsheets used to summarize model inputs and outputs and/or to prepare tables and graphs for the NEPA document and air quality technical report

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ADDITIONAL RESOURCES

PRACTITIONER'S HANDBOOKS AVAILABLE FROM THE CENTER FOR ENVIRONMENTAL EXCELLENCE BY AASHTO

1 Maintaining a Project File and Preparing an Administrative Record for a NEPA Study
2 Responding to Comments on an Environmental Impact Statement
3 Managing the NEPA Process for Toll Lanes and Toll Roads
4 Tracking Compliance with Environmental Commitments/Use of Environmental Monitors
5 Utilizing Community Advisory Committees for NEPA Studies
6 Consulting under Section 106 of the National Historic Preservation Act
7 Defining the Purpose and Need and Determining the Range of Alternatives for Transportation Projects
8 Developing and Implementing an Environmental Management System in a State Department of Transportation
9 Using the SAFETEA-LU Environmental Review Process (23 U.S.C. § 139)
10 Using the Transportation Planning Process to Support the NEPA Process
11 Complying with Section 4(f) of the U.S. DOT Act
12 Assessing Indirect Effects and Cumulative Impacts under NEPA
13 Developing and Implementing a Stormwater Management Program in a Transportation Agency
14 Applying the Section 404(b)(1) Guidelines in Transportation Project Decision-Making
15 Complying with Section 7 of the Endangered Species Act
16 Implementing Eco-Logical: Integrating Transportation Planning and Ecological Decision Making
17 Complying with Section 7 of the Endangered Species Act for Transportation Projects

For additional Practitioner's Handbooks, please visit the Center for Environmental Excellence by AASHTO web site at: http://environment.transportation.org

Comments on the Practitioner's Handbooks may be submitted to:
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