

Chapter 42
AIR QUALITY IMPACTS AND
TRANSPORTATION
CONFORMITY

MDT ENVIRONMENTAL MANUAL

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Chapter 42

AIR QUALITY IMPACTS AND TRANSPORTATION CONFORMITY

42.1 OVERVIEW

Air quality effects of MDT projects must be evaluated and addressed pursuant to Federal and State environmental review requirements, the provisions of 42 USC 7401 et seq. (the *Clean Air Act* (CAA)), MCA 75-2-101 et seq. (the *Clean Air Act of Montana*) and transportation-specific air quality requirements enacted in Federal Transportation Acts (e.g., the *Intermodal Surface Transportation Efficiency Act* of 1991 (ISTEA) and the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU)). This Chapter provides guidance and procedures for evaluating, analyzing and documenting the air quality impacts of proposed MDT projects to ensure compliance with Federal and State environmental review requirements and air quality laws, regulations and policies, including those that address conformity of proposed transportation projects with State air quality implementation plans.

The regulations and standards associated with air quality and transportation conformity are dynamic and their effects on MDT projects must be evaluated in the context of the latest approved Montana State Implementation Plan (SIP). Accordingly, the information in this chapter will require frequent updates to reflect changes in the air standards and regulations and the Montana SIP. When performing air quality and conformity analyses for proposed MDT projects, Analysts should consult with the Montana Department of Environmental Quality (DEQ) Air Quality Policy and Planning Section to ensure the correct standards and regulations are used.

42.1.1 Air Quality Standards

Under the authority of the CAA, see [Section 42.2.1](#), the US Environmental Protection Agency (EPA) sets National Ambient Air Quality Standards (NAAQS) for six principal air pollutants, also referred to as “criteria pollutants.” These include carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), particulate matter (PM_{2.5} and PM₁₀), sulfur dioxide (SO₂) and lead (Pb). Transportation contributes to four of the six criteria pollutants — carbon monoxide, ozone, nitrogen dioxide and particulate matter. If monitored levels of any of the criteria pollutants within the State violate the NAAQS, EPA, in cooperation with DEQ, will designate the contributing areas as “nonattainment” for the NAAQS involved. If the areas subsequently attain the air quality standard, EPA, if requested, may change the designation to “maintenance” for the pollutant(s) involved. Montana also has established air quality standards for transportation-related pollutants, including carbon monoxide, ozone, nitrogen dioxide, PM₁₀, sulfur dioxide and lead, as well as for settleable particulates and visibility. The Montana air quality standards are contained in the *Administrative Rules of Montana* (ARM) 17.8.210 – 17.8.230. The NAAQS and Montana Ambient Air Quality Standards (MAAQS) are provided in [Table 42-1](#).

Table 42-1— PERTINENT FEDERAL AND STATE AIR QUALITY STANDARDS

Pollutant	Time Period	Federal (NAAQS)	Montana (MAAQS)
Carbon Monoxide	Hourly Average	35 ppm ^(a)	23 ppm ^(b)
	8-hour Average	9 ppm ^(a)	9 ppm ^(b)
Lead	90-Day Average	0.15 µg/m ³	1.5 µg/m ³ (c)
	Quarterly Average	1.5 µg/m ³ (c)	—
Nitrogen Dioxide	Hourly Average	0.100 ppm ^(d)	0.30 ppm ^(b)
	Annual Average	0.053 ppm ^(e)	0.05 ppm ^(c)
Ozone	Hourly Average	0.12 ppm ^(f)	0.10 ppm ^(b)
	8-Hour Average	0.08 ppm ^(g)	—
	8-Hour Average	0.075 ppm ^(h)	—
PM ₁₀	24-Hour Average	150 µg/m ³ (i)	150 µg/m ³ (i)
	Annual Average	—	50 µg/m ³ (j)
PM _{2.5}	24-Hour Average	35 µg/m ³ (k)	—
	Annual Average	15 µg/m ³ (l)	—
Settleable Particulate	30-Day Average	—	10 g/m ² (c)
Sulfur Dioxide	Hourly Average	—	0.50 ppm ^(m)
	3-Hour Average	0.50 ppm ^(a)	—
	24-Hour Average	0.14 ppm ^(a,n)	0.10 ppm ^(b,o)
	Annual Average	0.03 ppm ^(e)	0.02 ppm ^(c)
Visibility	Annual Average	—	3 x 10 ⁻⁵ /m ^(c)

^a Federal violation when exceeded more than once per calendar year.

^b State violation when exceeded more than once over any 12 consecutive months.

^c Never exceed for the averaging time period as described in the State and/or Federal regulation.

^d Federal violation when 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area exceeds the standard.

^e Federal violation when the annual arithmetic mean concentration for a calendar year exceeds the standard.

^f EPA has revoked the 1-hr standard in all areas, although some areas have continuing obligations under that standard (anti-backsliding).

^g 1997 Standard. Federal violation when 3-year average of the annual fourth-highest daily maximum 8-hour concentration measured at each monitor within an area exceeds standard.

^h 2008 Standard. Federal violation if 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year exceeds 0.075 ppm.

ⁱ State and Federal violation when more than one expected exceedance per calendar year, averaged over 3 years.

^j State violation when the 3-year average of the arithmetic means over a calendar year at each monitoring site exceeds the standard.

^k Federal violation when 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitoring site exceeds the standard.

^l Federal violation when 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors exceeds the standard.

^m State violation when exceeded more than 18 times in any 12 consecutive months.

ⁿ Federal standard is based upon a calendar day (midnight to midnight).

^o State standard is based upon 24-consecutive hours (rolling).

42.1.2 Transportation Conformity

Regulations in 40 CFR 93 “Determining Conformity of Federal Actions to State or Federal Implementation Plans” address the requirements for transportation conformity. Conformity applies to both transportation plans and Transportation Improvement Programs (TIPs) (regional conformity), and to individual Federal projects (project-level conformity). Under the regional conformity requirements, Metropolitan Planning Organizations (MPOs) must provide a written conformity determination for transportation plans and TIPs involving designated nonattainment or maintenance areas for transportation-related criteria pollutants. This conformity determination affirms that the transportation plans and TIPs will not create new violations of the air quality standards, worsen existing violations, or delay attainment of the standards, and are consistent with the air quality SIP for the area, if one exists.

The conformity statement for plans and TIPs is based on an analysis of the most recent information available for the affected area regarding population, employment, travel and congestion. For nonattainment or maintenance areas served by an MPO, the MPO, or a consultant hired by the MPO, conducts the analysis with technical assistance from MDT. The technical assistance includes travel demand modeling that produces many of the inputs for emission inventory modeling. DEQ typically conducts the necessary emissions modeling using the current approved modeling program (e.g., MOBILE6.2, MOVES2010). The conformity determination for a transportation plan and TIP must also include an assurance that transportation control measures included in the SIP are being implemented in a timely fashion.

The MPO and/or MDT must provide the conformity statement to Federal Highway Administration (FHWA) for approval of transportation plans and TIPs. The MPO and/or MDT must update the statement in accordance with the time frames established in the conformity regulations, when changes to projects in a plan and/or TIP may affect the validity of the results of the conformity analysis, or when certain changes are made to the air quality SIP.

If conformity of the transportation plan and TIP is not determined according to the time frames established in the conformity regulations, or if a transportation plan or TIP cannot meet the motor vehicle emissions budget set forth in a SIP, or the other regional conformity tests for areas that do not have SIPs, a conformity lapse will occur. When conformity lapses, the only projects that may proceed are Federal projects that are exempt from transportation conformity, see [Section 42.3.1.2.2](#); transportation control measures in an approved SIP; project phases that have already received funding commitments from FHWA/FTA, and non-regionally-significant non-federal projects.

USDOT also must address conformity considerations for approval of certain individual projects in designated nonattainment or maintenance areas for transportation-related criteria pollutants. Projects subject to conformity considerations include those funded or approved by FHWA or the Federal Transit Administration (FTA). USDOT must determine if the projects are exempt from conformity in accordance with 40 CFR 93.126 “Exempt Projects,” and ARM 17.8.1301, et seq. If not, a number of project-level conformity requirements apply, including whether the project is included in a conforming transportation plan and TIP, whether it complies with any applicable PM₁₀ control measures in a PM₁₀ SIP, and if additional hot-spot analyses are necessary to determine conformity.

Slightly different project-level conformity requirements apply in isolated rural areas (nonattainment or maintenance areas that do not have an MPO, and therefore, do not have a

transportation plan or TIP). In these areas, MDT and USDOT, in addition to meeting the project-level requirements listed above, also need to conduct a regional emissions analysis to show that the proposed project, along with all other current and future roadways in the area, will meet the emissions budget in the SIP, or the conformity tests that apply for areas that do not have budgets. For these isolated rural areas, MDT conducts the analyses for conformity in cooperation with DEQ. Finally, in the case of isolated rural areas, conformity applies not only to Federal projects, but also to regionally-significant State or local projects.

42.1.3 Mobile Source Air Toxics

Emission of toxic air pollutants from mobile sources is an emerging area of concern for transportation projects and is a continuing area of research. Air toxics, also known as hazardous air pollutants, are substances that are known to cause or are suspected of causing cancer or other serious health effects. The CAA identified 188 air toxics and EPA has identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS). In addition, EPA has also identified in the 1999 National Air Toxics Assessment (NATA) a subset of seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers — acrolein, benzene, 1, 3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene and polycyclic organic matter. While FHWA considers these the priority Mobile Source Air Toxics (MSAT), the list is subject to change and may be adjusted in consideration of future EPA rules. MDT must evaluate its proposed projects to determine the need for and nature of further MSAT analyses.

42.2 LAWS, REGULATIONS AND GUIDANCE

42.2.1 42 USC 7401 et seq., “Air Pollution Prevention and Control”

These Parts of the *United States Code* (USC) codify the provisions of the CAA. The fundamental purpose of the CAA is to protect and enhance the quality of the Nation’s air resources to promote the public health, welfare and the productive capacity of its population. Under the authority of the CAA, the EPA uses six criteria pollutants (i.e., Ozone (O₃), Carbon Monoxide (CO), Nitrogen Dioxide (NO₂), Sulfur Dioxide (SO₂), Particulate Matter (PM_{2.5}, PM₁₀), Lead (Pb)) as indicators of air quality. The EPA has established a maximum concentration above which adverse effects on human health may occur. These threshold concentrations constitute the NAAQS. Current NAAQS are available on the EPA website. The CAA provides that when an area does not meet the air quality standard for one of the criteria pollutants, it may be subject to the formal rule-making process that designates it as nonattainment for that pollutant. Under the CAA, EPA further classifies O₃, CO and some PM nonattainment areas based on the magnitude of an area’s problem. Nonattainment classifications may be used to specify air pollution reduction measures an area must adopt and when the area must reach attainment.

42.2.2 23 USC 139 “Efficient Environmental Reviews for Project Decision-Making”

For projects involving preparation of an environmental impact statement and for environmental assessments being prepared in accordance with the FHWA “SAFETEA-LU Environmental Review Process Final Guidance,” this part of the USC requires that, at appropriate times during the study process, the lead agency or agencies for the project collaborate with agencies serving as participating agencies to determine the methodologies to be used and the level of detail required for assessing impacts, including air quality impacts. See [Chapters 11 “Preparing Environmental Documentation,” 13 “Environmental Assessment/FONSI” and 14 “Environmental Impact Statement/ROD”](#) for further guidance on this requirement.

42.2.3 40 CFR 93 “Determining Conformity of Federal Actions to State or Federal Implementation Plans”

Subpart A of this part of the *Code of Federal Regulations* (CFR) is titled “Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved under Title 23 USC or the Federal Transit Laws.” Subpart A sets forth policy, criteria and procedures for demonstrating and ensuring that transportation plans, programs and projects developed, funded or approved by USDOT and by MPOs or other recipients of Federal transportation funds, conform to an applicable approved air quality SIP for achieving and maintaining the NAAQS. These rules require State DOTs and MPOs to develop metropolitan long-range transportation plans and TIPs that conform to the emissions budget and the schedule of transportation control measures established in the air quality SIP. They also provide criteria and guidelines for conducting hot-spot analyses (i.e., estimations of likely future localized CO, PM₁₀ and/or PM_{2.5} concentrations and comparison of those concentrations to the relevant NAAQS) to determine conformity for specific projects. The purpose of conformity is to:

- reduce the severity and number of violations of the NAAQS;

- achieve as expeditiously as practical, standards for which an area is designated nonattainment;
- ensure compliance with an air quality maintenance plan;
- support the integration of transportation, land use and air quality planning; and
- ensure that individual nonexempt projects do not violate air quality standards.

Subpart B of this part of the CFR is titled “Determining Conformity of General Federal Actions to State or Federal Implementation Plans.” It addresses conformity requirements for Federal actions other than those funded or approved under Title 23 USC or the *Federal Transit Act*.

42.2.4 40 CFR 51 and 93 “Transportation Conformity Rule Amendments To Implement Provisions Contained in the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)”

This Final Rule, dated January 24, 2008, implements amendments to the conformity regulations to make them consistent with CAA Section 176(c) as amended by SAFETEA-LU, including changes to reflect that the CAA:

- provides more time for State and local governments to meet conformity requirements,
- provides a one-year grace period before the consequences of not meeting certain conformity requirements,
- allows the option of shortening the timeframe of conformity determinations, and
- streamlines other provisions.

The final rule also includes minor amendments that are not related to SAFETEA-LU (e.g., allowing the USDOT to make categorical hot-spot findings for appropriate projects in CO nonattainment and maintenance areas). While the SAFETEA-LU statutory changes apply in all states, these non-statutory amendments only apply in states with up-to-date “conformity SIPs” (another type of SIP that incorporates the Federal conformity requirements into state law). As of the date of this section, Montana's conformity SIP is based on an older version of the Federal conformity rules, and some of these streamlining amendments do not apply in Montana.

42.2.5 40 CFR 81.417 “Identification of Mandatory Class I Federal Areas Where Visibility Is an Important Value” – Montana Mandatory Class I Federal Areas

This part of the CFR lists mandatory Federal Class I areas, established under the CAA amendments of 1977 in the State of Montana, where the Administrator of EPA, in consultation with the Secretary of Interior, has determined visibility to be an important value. These sites consist primarily of wilderness areas, wildlife refuges and national parks. They rarely are a concern for transportation conformity or project-specific air-quality impact analyses.

42.2.6 MCA 75-2-101 et seq., “Clean Air Act of Montana”

The purpose of these Parts of the *Montana Code Annotated* (MCA) is to achieve and maintain levels of air quality that:

- protect human health and safety and, to the greatest degree practicable, prevent injury to plant and animal life and property;
- foster the comfort and convenience of the people;
- promote the economic and social development of the State of Montana; and
- facilitate the enjoyment of the natural attractions of this State.

As a key part of the measures for achieving its objectives, the *Act* provides for a coordinated Statewide program of air pollution prevention, abatement and control. Ambient air quality standards established pursuant to the *Clean Air Act of Montana* can be found in ARM 17.8.210 through 17.8.230.

42.2.7 ARM 17.8.1301 through 17.8.1313 “Conformity”

These Parts of the ARM provide State-level transportation conformity requirements that are administered by DEQ. The rules incorporate by reference 40 CFR 93, Subpart A, see [Section 42.2.2](#), with some modifications. They include sections on definitions; incorporation by reference; determining conformity of transportation plans, programs and projects to State or Federal implementation plans; consultation requirements and procedures; notice requirements for non-FHWA/FTA projects; conflict resolution and public consultation procedures.

As noted above, these rules are based on an outdated version of the Federal conformity rule. DEQ and USEPA are working to resolve this mismatch in requirements, with the goal that the Federal rule will be incorporated by reference into the State rules, so that only one set of requirements applies. The State rules will continue to govern the interagency consultation process, and enforceability of certain project-level mitigation actions.

42.2.8 ARM 17.8.1401 and 17.8.1402 “Conformity of General Federal Actions”

These Parts of the ARM address conformity requirements for Federal actions other than those covered by 40 CFR 93, Subpart A. These rules incorporate by reference 40 CFR 93, Subpart B; see [Section 42.2.2](#). They include sections on definitions and incorporation by reference.

42.2.9 Guidance Available on FHWA Website

On its website, FHWA posts various guidance documents concerning air quality and transportation conformity issues. The guidance frequently changes. The following are examples of the types of information available:

1. [FHWA Transportation Conformity Reference Guide](#). FHWA prepared this *Guide* to facilitate State and local agency compliance with the transportation conformity

- requirements. It is a reference manual that contains transportation conformity rule and relevant preamble language, questions and answers, and lists of useful resource materials.
2. Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas. FHWA and EPA jointly developed this March 29, 2008, guidance to help State and local agencies meet the hot-spot analysis requirements published by EPA as a final rule on March 10, 2006.
 3. FHWA Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents. This memorandum, dated September 30, 2009, updates the February 2006 interim guidance that advises FHWA Division Offices when and how to analyze MSAT in the *National Environmental Policy Act* (NEPA) (42 USC 4321, et seq.) process for highway projects. The interim guidance update reflects regulatory changes that have occurred since the issuance of the initial interim guidance. It addresses:
 - stakeholder requests to broaden the horizon years of emission trends performed with MOBILE6.2;
 - updates stakeholders on the status of scientific research on air toxics; and
 - incorporates changes to improve the organization, update headings and reduce redundancy found in some of the appendices.
 4. FHWA Technical Advisory T 6640.8A. FHWA Technical Advisory T 6640.8A, dated October 30, 1987, includes guidance on air-quality impact information to be included in project environmental documents. According to the Technical Advisory, if an analysis is performed, the draft EIS should contain a brief discussion of the transportation-related air quality concerns in the project area and a summary of the project-related CO analysis. The Technical Advisory can be found by searching for “T 6640.8A” on the FHWA home page.
 5. “A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives.” This paper provides the results of an analysis of air toxic emissions due to mobile sources for a hypothetical transportation project designed to mitigate traffic congestion. The underlying purpose of the research is to provide a practical example of how a mobile-source air toxics analysis may be applied to a planned project.

42.3 PROCEDURES

The Preliminary Field Review (PFR) is the initial step in the analysis of a proposed project for air quality impacts. The Design Team (DT) notifies and invites appropriate MDT personnel, including the Air Quality Analyst within the MDT Environmental Services Bureau (ESB), to the field review. The Project Development Engineer (PDE) reviews the list of ESB attendees and includes others as necessary to ensure appropriate ESB personnel are in attendance. Following the field review, the DT prepares a PFR Report summarizing the issues discussed during the PFR, including air quality issues. The DT distributes the final PFR Report for review and comment. The Air Quality Analyst participates in the PFR and/or reviews the PFR Report to make a preliminary evaluation of available information on the project scope and to determine the need for gathering additional information for addressing air quality requirements for the project. Within ESB, the PDE serves as the document champion to collect and coordinate comments from the other Sections. The PDE compiles the comments into a PFR review memorandum for signature by the Environmental Services Bureau Chief.

For projects subject to the requirements of 23 USC 139 “Efficient Environmental Reviews for Project Decision-Making,” the Air Quality Analyst, in cooperation with FHWA, collaborates with participating agencies in determining the appropriate methodologies to be used and the level of detail required in the analysis of air quality impacts of project alternatives.

The Analyst gathers additional information for applicable air quality issues, conducts the necessary analyses and documents the findings for each issue area.

42.3.1 Project-Level Conformity

Figure 42-1 provides a flowchart of the steps for addressing conformity requirements on specific projects.

42.3.1.1 Information Gathering (Project-Level Conformity)

For purposes of addressing conformity requirements, the Analyst will need to have information about the project location and its relationship to the boundaries of current nonattainment and/or maintenance areas for CO, PM₁₀, PM_{2.5} or other transportation-related criteria pollutants. Information regarding the location and boundaries of nonattainment areas in Montana is available on the DEQ website and EPA website. The EPA website also provides information on the location and boundaries of current maintenance areas in Montana.

If any part of a project is located within a nonattainment or maintenance area for a transportation-related criteria pollutant, the Analyst will need information from the current approved conformity regulations in ARM 17.8.1301, et seq., and additional project-related information. The necessary project information will include project type. It may also include whether the project will be funded or approved by FHWA or the FTA, whether it is located in an area under the jurisdiction of an MPO, whether it is included in a transportation plan and TIP that has been found to conform to the current approved air quality SIP, and/or whether it was included in regional emissions analyses conducted for conformity purposes. Information gathering for project-level conformity is an iterative process that can vary for each project, depending upon the results for each step of the analyses conducted.

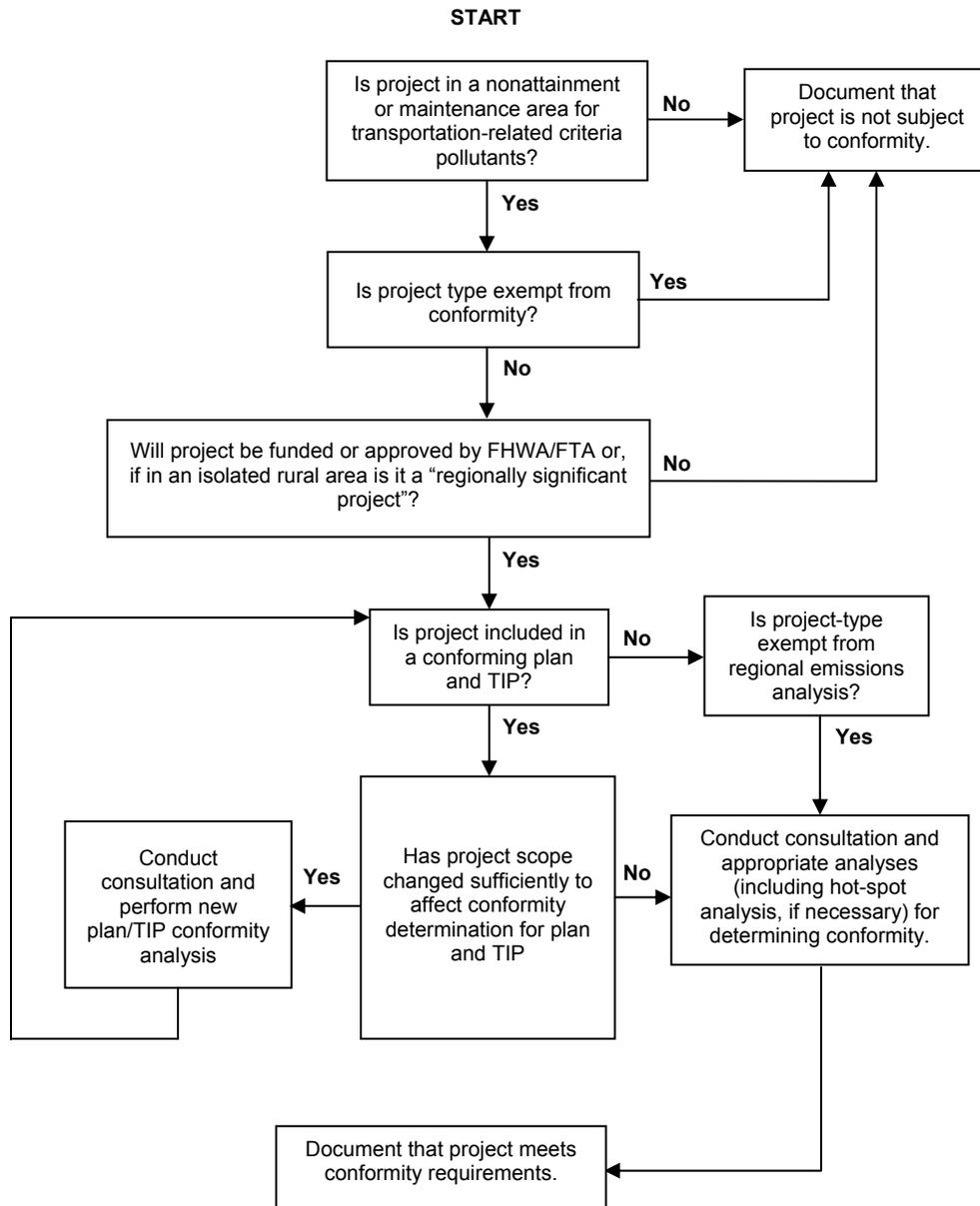


Figure 42-1 — PROJECT-LEVEL CONFORMITY

42.3.1.2 Analysis and Findings (Project-Level Conformity)

42.3.1.2.1 Evaluate for Involvement with Nonattainment or Maintenance Area(s)

The Analyst first compares the project location information with the boundaries of current nonattainment and maintenance areas. If the project is not within a nonattainment or maintenance area for transportation-related criteria pollutants, it is not subject to the conformity requirements. The Analyst documents this determination on the Initial Site Assessment (ISA) Form and files the Form on the Document Management System (DMS). The Analyst may also provide a copy of the Form to the DT. Further information gathering or analysis to address conformity for the project is not necessary.

42.3.1.2.2 Evaluate for FHWA/FTA Funding or Approvals or Regionally Significant Project Status

If the project is within a nonattainment or maintenance area for transportation-related criteria pollutants, the Analyst coordinates with MDT Planning to determine if it will involve funding or approvals from FHWA or FTA or is a regionally significant project in an isolated rural area, as defined in ARM 17.8.1301.

If the project will not involve funding or approvals from FHWA/FTA and is not a regionally significant project in an isolated rural area, it is not subject to project-level conformity requirements, in accordance with the rules in ARM 17.8.1301, et seq. The Analyst documents the determination on the ISA Form and files the Form on the DMS. The Analyst also may provide a copy of the Form to the DT. Further information gathering or analysis to address conformity for the project is not required.

42.3.1.2.3 Evaluate for Exemption from Conformity Based on Project-Type

If the project is located within a nonattainment or maintenance area for transportation-related criteria pollutants and will involve funding or approvals from FHWA/FTA or is a regionally significant project in an isolated rural area, the Analyst compares information on the proposed action with the current list of project-types that are exempt from the requirement for an air-quality conformity determination; see ARM 17.8.1301, et seq. Project-types in the list may proceed toward implementation even in the absence of a conforming plan and TIP, unless the MPO, in consultation with other agencies, concurs that the project has the potential to adversely affect air quality emissions. The current list of exempt project-types include the following:

1. Safety. Exempt safety projects include the following:
 - railroad/highway crossing;
 - projects that correct, improve or eliminate a hazardous location or feature;
 - safer non-Federal-aid system roads;
 - shoulder improvements;
 - increasing sight distance;
 - Highway Safety Improvement Program implementation;
 - traffic control devices and operating assistance other than signalization projects;
 - railroad/highway crossing warning devices;

- guardrails, median barriers and crash cushions;
 - pavement resurfacing and/or rehabilitation;
 - pavement marking;
 - emergency relief (23 USC 125);
 - fencing;
 - skid treatments;
 - safety roadside rest areas;
 - adding medians;
 - truck-climbing lanes outside the urbanized area;
 - lighting improvements;
 - widening narrow pavements or reconstructing bridges (i.e., no additional travel lanes); and
 - emergency truck pullovers.
2. Mass Transit. Exempt mass transit projects include the following:
- operating assistance to transit agencies;
 - purchase of support vehicles;
 - rehabilitation of transit vehicles (in PM₁₀ and PM_{2.5} nonattainment or maintenance areas, projects are exempt only if they are in compliance with control measures in the applicable implementation plan);
 - purchase of office, shop and operating equipment for existing facilities;
 - purchase of operating equipment for vehicles (e.g., radios, fare boxes, lifts);
 - construction or renovation of power, signal and communications systems;
 - construction of small passenger shelters and information kiosks;
 - reconstruction or renovation of transit buildings and structures (e.g., rail or bus buildings, storage and maintenance facilities, stations, terminals and ancillary structures);
 - rehabilitation or reconstruction of track structures, track and track bed in existing rights-of-way;
 - purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet (in PM₁₀ and PM_{2.5} nonattainment or maintenance areas, projects are exempt only if they are in compliance with control measures in the applicable implementation plan); and
 - construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR part 771.
3. Air Quality. Exempt air quality projects include the following:
- continuation of ride-sharing and van-pooling promotion activities at current levels, and
 - bicycle and pedestrian facilities.
4. Other. Other exempt projects include the following:
- specific activities that do not involve or lead directly to construction, for example:
 - + planning and technical studies,
 - + grants for training and research programs,

- + planning activities conducted pursuant to Titles 23 and 49 USC, and
- + Federal-aid systems revisions;
- engineering to assess social, economic and environmental effects of the proposed action or alternatives to that action;
- noise attenuation;
- emergency or hardship advance land acquisitions (23 CFR 710.503);
- acquisition of scenic easements;
- plantings, landscaping, etc.;
- sign removal;
- directional and informational signs;
- transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures or facilities); and
- repair of damage caused by natural disasters, civil unrest or terrorist acts, except projects involving substantial functional, locational or capacity changes.

If the project is a type that is exempt from the requirement for a conformity determination, the Analyst documents this finding on the ISA Form and files the Form on the DMS. The Analyst also may provide a copy of the Form to the DT. Further information gathering or analysis to address conformity for the project is not necessary.

42.3.1.2.4 Evaluate for Involvement with MPO

If the project will involve funding or approvals from FHWA/FTA or is a regionally significant project and is not exempt from the requirement for a conformity determination, the Analyst coordinates with the MDT Multimodal Planning Bureau to determine whether or not it is within an area under the jurisdiction of an MPO. Current metropolitan areas in Montana with MPOs included Billings, Great Falls and Missoula.

Projects Under MPO Jurisdiction

If the project is completely or partly within the boundaries of an area under the jurisdiction of an MPO, the Analyst coordinates with the MPO to determine if the project is included in a conforming transportation plan and TIP.

If the project is not included in a conforming plan and TIP, the Analyst checks the current approved rules in ARM 17.8.1301, et seq. to determine if the project is a type that is exempt from regional emissions analyses. Current list of project-types exempt from regional emissions analyses included the following:

- intersection channelization projects,
- intersection signalization projects at individual intersections,
- interchange reconfiguration projects,
- changes in vertical and horizontal alignment,
- truck size and weight inspection stations, and
- bus terminals and transfer points.

If the project is not included in a conforming plan and TIP but is a type that is exempt from regional emissions analyses, the Analyst documents this determination on the ISA Form and files the Form on the DMS. The Analyst also may provide a copy of the Form to the DT. If the project is not included in a conforming plan and TIP and is not a type that is exempt from regional emissions analyses, there are two options: 1) consult with the MPO and have the plan and TIP amended to include the project (including a new conformity determination), or 2) follow the conformity regulation requirements for projects not from a plan and TIP. This entails conducting a regional emissions analysis to demonstrate that the plan and TIP would still conform, even with the new project, along with a demonstration that the project will not interfere with any transportation control measures in the SIP. These same approaches also apply if the project is in the plan and TIP, but the design concept and scope of the project have changed in such a way as to change the emissions estimates from the plan and TIP.

If the project is included in a conforming plan and TIP, and the design concept and scope are consistent, the Analyst initiates contact with other agencies in accordance with the consultation procedures and requirements in ARM 17.8.1305, 17.8.1306 and 17.8.1310, to meet the project-level conformity requirements, including, if necessary, a hot-spot analysis for the project. Upon completion of the conformity analysis and, if applicable, hot-spot analysis, the Analyst includes documentation of the results in the project file. If applicable, the results will include discussion of project changes or mitigation measures necessary to make the project consistent with the motor vehicle emissions budget(s). The Analyst also provides copies of the documentation to the DT and the person preparing the NEPA and/or *Montana Environmental Policy Act* (MEPA) (MCA 75-1-101, et seq.) documentation for the project.

If the current regulations clearly indicate a hot-spot analysis is not required, the Analyst documents the findings (i.e., that the project is in a conforming plan and TIP and does not require a hot-spot analysis) on the ISA Form and files the Form on the DMS. The Analyst also contacts the DT and the person preparing the NEPA/MEPA documentation for the project and notifies them of the findings.

If the Analyst finds that the determination of whether the project requires a hot-spot analysis is not clear cut, or if the Analyst believes concurrence should be obtained from appropriate agencies regarding a determination that a hot-spot analysis is not required, the Analyst initiates contact with other agencies in accordance with the consultation procedures and requirements in ARM 17.8.1305, 17.8.1306 and 17.8.1310. The Analyst prepares a letter to the appropriate agencies, including DEQ, the MPO, FHWA and EPA, explaining the rationale for determining that a hot-spot analysis is not required. The Analyst indicates in the letter that concurrence will be assumed unless the recipients indicate otherwise by a specified date. If no objection is received, the Analyst documents the findings on the ISA Form and files the Form on the DMS. The Analyst also contacts the DT and the person preparing the NEPA/MEPA documentation for the project and notifies them of the findings.

If it is determined that a hot-spot analysis is required, the Analyst initiates a conference call with representatives from DEQ, the MPO, FHWA and EPA to determine what the analysis will entail and who will do it. The Analyst documents the results of the discussions for the project file and provides a copy to the DT. Upon completion of the hot-spot analysis, the Analyst includes documentation of the results, including discussion of mitigation measures to address problems associated with air emissions from the project, if applicable, in the project file. The Analyst also provides copies of the documentation to the DT and the person preparing the NEPA/MEPA documentation for the project.

Projects Not Under MPO Jurisdiction

For projects in isolated rural nonattainment or maintenance areas (i.e., areas that do not have a metropolitan transportation plan or TIP and the projects in the areas are not part of the emissions analysis of any MPO's transportation plan or TIP), the Analyst accomplishes the same steps as described above for projects under MPO jurisdiction except that coordination and consultation that would occur with the MPO is accomplished with MDT Planning, DEQ, FHWA, EPA and local entities. These steps are needed for Federal projects, and for non-Federal regionally significant projects. In addition, projects in isolated rural nonattainment areas require a regional emissions analysis. The methodologies and parameters for this analysis are determined on a case-by-case basis through the interagency consultation process.

42.3.2 Mobile Source Air Toxics (MSAT)

Figure 42-2 provides a flowchart of the steps for addressing MSAT requirements.

42.3.2.1 Information Gathering (MSAT)

For addressing MSAT, the Analyst gathers sufficient information to determine if the project is a type that has potential for MSAT effects and, if so, the level of potential.

42.3.2.1.1 No Potential MSAT Effects

Projects with no potential for meaningful MSAT effects include those that qualify as a CE under 23 CFR 771.117(c), those that are exempt under the CAA conformity rule under 40 CFR 93.126 (see [Section 42.3.1.1](#)) and other projects with no meaningful impacts on traffic volumes or vehicle mix. See FHWA "Interim Guidance on Air Toxic Analysis in NEPA Documents" for further clarification. To address this consideration, the Analyst obtains project information for determining whether the project qualifies as a CE, is exempt under the CAA conformity rule or would have any meaningful impacts on traffic volumes or vehicle mix. If it is determined the project has no potential for meaningful MSAT effects, the Analyst documents the finding that analysis of MSAT is not required; see [Section 42.3.2.2.1](#). This completes the information gathering for MSAT.

42.3.2.1.2 Low Potential MSAT Effects

Projects with low potential MSAT effects include those aimed at improving operations without substantially increasing capacity or without creating a new facility that would affect emissions. To address this consideration, the Analyst obtains information for determining the project's purpose, its effect on capacity and whether it would create a new facility that would affect emissions. See FHWA "Interim Guidance on Air Toxic Analysis in NEPA Documents" for further clarification. If it is determined the project has low potential MSAT effects, the Analyst documents the finding that the project requires discussion of MSAT (see [Section 42.3.2.2.2](#)) and gathers information for performing a qualitative assessment of emissions projections. For this assessment, the Analyst obtains information on the expected effect of the project alternatives on

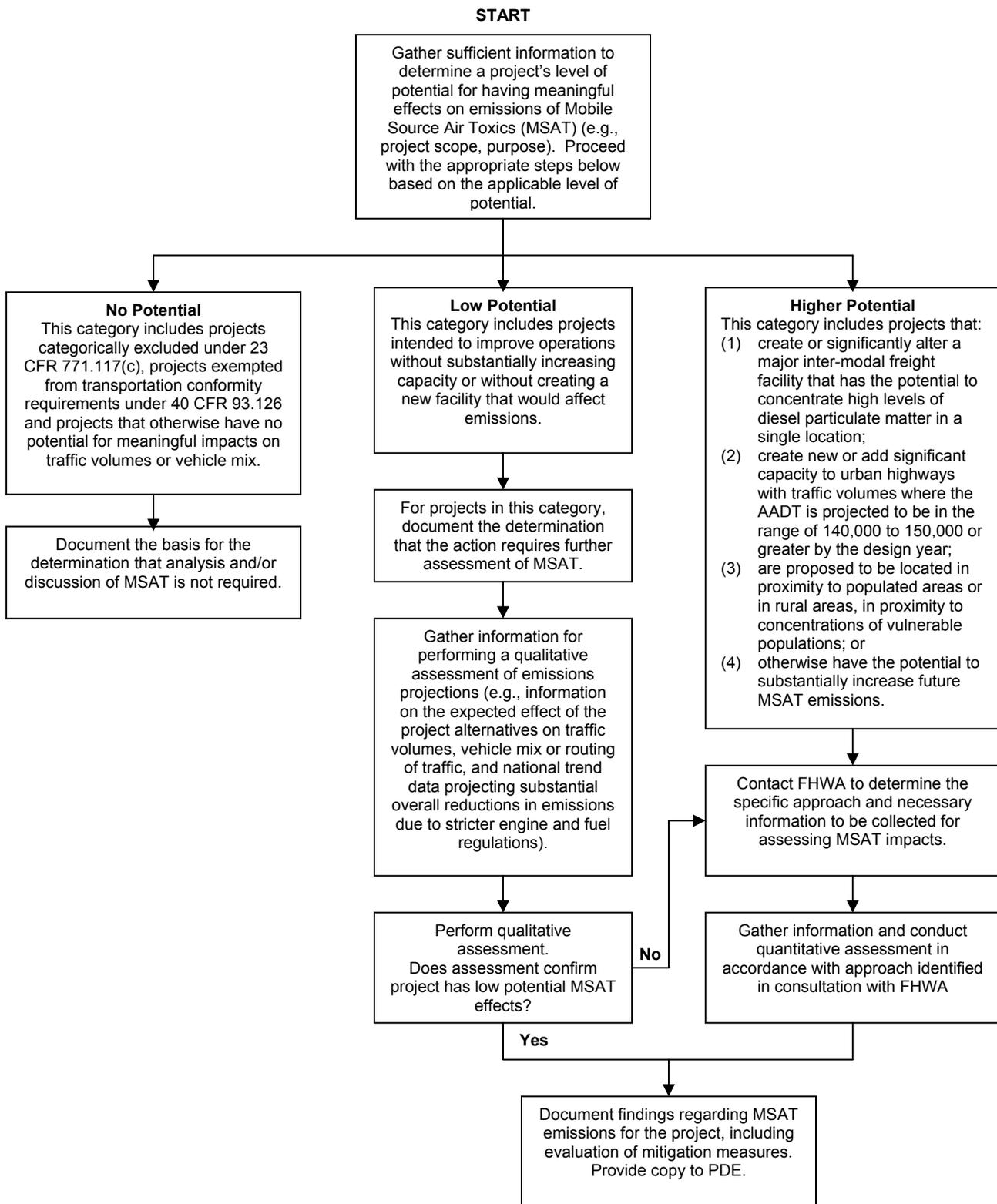


Figure 42-2 — MOBILE SOURCE AIR TOXICS

traffic volumes, vehicle mix or routing of traffic and national trend data projecting substantial overall reductions in emissions due to stricter engine and fuel regulations. If it is determined the project does not fit the criteria for a type with no potential or low potential for MSAT effects, the Analyst proceeds with information gathering for projects with higher potential MSAT effects.

42.3.2.1.3 Higher Potential MSAT Effects

Projects with higher potential MSAT effects include those that have the potential for meaningful differences among project alternatives. To fall into this category, a project must:

- create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location;
- create new or add significant capacity to urban highways (e.g., Interstates, urban arterials, urban collector-distributor routes) with traffic volumes where the AADT is projected to be in the range of 140,000 to 150,000 or greater by the design year; or
- be proposed to be located in proximity to populated areas or in rural areas, in proximity to concentrations of vulnerable populations (e.g., schools, nursing homes, hospitals).

In accordance with FHWA “Interim Guidance on Air Toxic Analysis in NEPA Documents,” the Analyst contacts FHWA to determine the specific approach and necessary information to be collected for assessing the MSAT impacts and then proceeds accordingly. The Analyst also consults with FHWA on the specific approach and necessary information if it is determined a project does not fit any of the project types described, but has the potential to substantially increase future MSAT emissions.

42.3.2.2 Analysis and Findings (MSAT)

42.3.2.2.1 No Potential MSAT Effects

If the Analyst determines that the project has no potential for MSAT effects and that an analysis of MSAT is not required, the Analyst prepares documentation that explains the basis for the determination and documents this finding on the ISA Form. The Analyst places the ISA Form into the project file and, if useful, gives a copy to the DT. See Appendix A of the FHWA “Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents” for prototype language for exempt projects.

42.3.2.2.2 Low Potential MSAT Effects

If the Analyst determines the project is a type with low potential MSAT effects and requires further assessment of MSAT, the Analyst documents this finding on the ISA Form. The Analyst places the ISA Form into the project file and, if useful, gives a copy to the DT. The Analyst then conducts a qualitative assessment of emissions projections. This qualitative assessment compares, in narrative form, the expected effect of the project on traffic volumes, vehicle mix or traffic routing and the associated changes in MSAT for the project alternatives, based on VMT, vehicle mix and speed. It also discusses national trend data projecting overall reductions in emissions due to stricter engine and fuel regulations issued by EPA. Because the emission

effects of these projects are low, there typically should be no appreciable difference in overall MSAT emissions among the project alternatives. See Appendix B of FHWA "Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents" for prototype language for a qualitative MSAT assessment.

42.3.2.2.3 Higher Potential MSAT Effects

If it is determined the project is a type with higher potential MSAT effects, the Analyst conducts a more rigorous assessment of the effects based on the approach and information determined appropriate for the project in consultation with FHWA during information gathering for MSAT. The assessment includes a quantitative analysis that would attempt to measure the level of emissions for the seven priority MSAT for each project alternative, to use as a basis for comparison. The analysis also may address the potential for cumulative impacts, where appropriate, based on local conditions. If the analysis indicates meaningful differences in levels of MSAT emissions, the Analyst identifies and considers mitigation options. See FHWA "Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents" (HEPN-10, February 2006) for information on documenting the results of the analysis and for information on MSAT mitigation strategies; see Appendix E of the Interim Guidance.

The Analyst documents the findings regarding MSAT emissions for the project, including evaluation of mitigation measures in a report that presents the results of all air quality impact analyses conducted for the project. The Analyst provides this report to the PDE for use in preparing the environmental documentation for the project.

42.3.3 Air Quality Models

Models used for air quality analyses include the following:

1. MOBILE. EPA's MOBILE model predicts emission factors for vehicles. Emission factors are essentially the rate of pollutants for an average vehicle, usually expressed in grams/miles (i.e., moving vehicles) or grams/hour (i.e., idle vehicles). Emission factors determined by the MOBILE model are often stratified by speed and year. The parameters used in the MOBILE model are commonly prepared by the MPO or Montana DEQ. Data that is incorporated can include vehicle age, vehicle mileage by vehicle type, inspection and maintenance programs, and specific fuel makeup characteristics.

These emission factors may be reported in the project documentation, but are of little value alone. The MOBILE model output emission factors are incorporated into either or both localized (e.g., hot-spot) and regional analyses. The local and regional analyses provide a more meaningful result for use in quantifying project impacts.

2. MOVES. This is EPA modeling tool is being phased in to replace the MOBILE model for analyzing mobile source emissions. The Motor Vehicle Emission Simulator (MOVES) model estimates emissions at a more detailed level and allows users to incorporate a variety of activity data to better estimate emission differences. MOVES2010 is currently EPA's best available tool for quantifying criteria pollutant and precursor emissions, as well as for other emissions analyses of the transportation sector. EPA started a 2-year grace period for use of MOVES for regional conformity analysis in March 2010, and will

start a similar 2-year grace period for project-level conformity analysis later in 2010. FHWA will also issue guidance on the use of MOVES in NEPA for non-conformity (e.g., MSAT) analysis later in 2010.

3. **CAL3QHC.** CAL3QHC is the name of the dispersion model used to determine carbon monoxide concentrations at discrete receptors for localized analyses. For project level analyses, this model is used at worst-case intersections to prove that carbon monoxide levels do not exceed the NAAQS. The model incorporates the emission factors from the MOBILE model, along with intersection operating characteristics (e.g., signal timing, traffic volume, intersection geometry).
4. **Regional Analysis Models (Mesoscale Modeling).** Regional air quality analyses incorporate regional, travel-demand model results and Mobile emission factors to calculate total regional emissions. Regional travel demand models are capable of creating vehicle miles traveled (VMT) and average speed on each roadway link of the roadway network. The multiplication of the link VMT by the emission factor for the given link speed results in the total emissions for the link. The sum of emissions for all links results in the total regional emissions.

These regional analyses focus on transportation-related pollutants, which include CO, NO₂ and VOC. Ozone is not directly generated and is not modeled directly. However, NO₂ and VOC create ozone in the presence of sunlight and are, therefore, evaluated. Any increase in these pollutants is detrimental to the environment and, depending on the attainment status, an increase could prevent a transportation project from moving forward.

42.3.4 Air Quality Mitigation Measures

42.3.4.1 Project-Specific Air Quality Mitigation Measures

The Air Quality Analyst may need to write special provisions to include in contract plans regarding dust suppression during construction.

If violations of any local standards or the NAAQS were predicted that are worse than similar predicted violations in the No Action scenario, mitigation measures would be required. Mitigation measures could include adding intersection capacity by adding traffic lanes, optimizing signal timing for air quality purposes or diverting traffic to other locations. Note that the potential exists for these mitigation measures to cause impacts themselves. Impacts could include right-of-way acquisition for additional lanes or increased pedestrian conflict areas due to greater distances across additional driving lanes. Diverting traffic to other locations may cause impacts at other intersections that may not be equipped to handle greater traffic volumes.

42.3.4.2 Regional Air Quality Mitigation Measures

Regional measures may be considered to address non-attainment of pollutants or localized mitigation measures may be considered due to exceedances of NAAQS. Regional air-quality mitigation measures may include roadway or transit projects to reduce congestion or inspection, and maintenance programs to reduce vehicle emissions.

