

Air & Noise

Air – Assessing Impacts

Objective
Methodology
Carbon Monoxide
Ozone
Mobile Source Air Toxics

OBJECTIVE

Assessing air impacts will accomplish the following:

- > Screen the project by funding, location, type, operational efficiency, and traffic volumes to determine the criteria pollutants and Mobile Source Air Toxics (MSATs) to be assessed;
- > Predict the effects that the proposed project would have on air quality; and
- > Demonstrate that the proposed project is consistent with federal and state air quality goals, found in the State Implementation Plan (SIP), the National Environmental Policy Act (NEPA), and the Georgia Environmental Policy Act (GEPA).

METHODOLOGY

Federal-aid projects require an air assessment addressing Clean Air Act (CAA) criteria pollutants and MSATs. Ozone (O₃) is currently the only criteria pollutant that requires a project-level assessment. For state-funded projects, GEPA sets forth guidance on air quality and the air assessment focuses on O₃. Each pollutant has its own methodology for assessing impacts.

Please note, effective October 24, 2016, all of Georgia is considered to be in attainment for particulate matter (PM)_{2.5}. As a result, this guidance provides no methodology for assessing PM_{2.5}.

Please note, effective May 1, 2020, Georgia Department of Transportation (GDOT) and Federal Highway Administration (FHWA) have signed an agreement determining that quantitative Carbon Monoxide (CO) project-level analyses are not required for projects located in CO attainment areas throughout Georgia.

CARBON MONOXIDE

Currently, there are no areas within the State of Georgia that are classified as nonattainment or maintenance for CO, per the 1-hour and 8-hour primary National Ambient Air Quality Standards (NAAQS) for CO. In an effort to continue to expedite GDOT projects, GDOT and FHWA have signed an agreement effective May 1, 2020 determining that quantitative CO project-level analyses are not required for projects located in CO attainment areas throughout Georgia. As such, the CO assessment for projects must be updated to be in concurrence with current standards. The following should be included in the Air Assessment Report.

The Environmental Protection Agency (EPA) first set air quality standards for CO in 1971. For the protection of both public health and welfare, EPA set an 8-hour primary standard at 9 parts per million (ppm) and a 1-hour primary standard at 35 ppm. Nationally, and particularly in urban areas, the majority of CO emissions to ambient air come from mobile sources.

Transportation conformity is required for federal transportation projects in areas that have been designated by the EPA as not meeting the NAAQS. These areas are called nonattainment areas if they currently do not meet air quality standards or maintenance areas if they have previously violated air quality standards, but currently meet them and have an approved maintenance plan.

Currently, there are no areas within the State of Georgia that are classified as nonattainment or maintenance for CO, and no regional or project-level conformity requirements for CO are in effect for the State of Georgia. In accordance with 40 CFR 93.102(b), transportation conformity determinations only apply in nonattainment and maintenance areas, but Georgia is in attainment for CO. In an effort to continue to expedite GDOT projects, effective May 1, 2020 GDOT and FHWA have determined that quantitative CO project-level analyses are not required for CO attainment areas within Georgia.

FHWA-GDOT May 2020 Agreement: Qualitative Project-Level
Analyses for GA Areas in Attainment for Carbon Monoxide,
GDOT-FHWA, May 2020

OZONE

The CAA requires Transportation Plans and Transportation Improvement Programs (TIP) in areas not meeting the NAAQS to conform to the emissions budget of the SIP for air quality. For projects within the non-attainment area or a maintenance area for O₃, inclusion in a conforming plan serves as an assessment, or project-level analysis, of O₃.

The Air Specialist will need to document the following information from the five-year conforming plan:

- > The agency that developed the plan (e.g., the Atlanta Regional Commission),
- > The date the agency adopted the plan,
- > The date the agency received a conformity determination from the US Department of Transportation, and
- > The reference number used to identify the project within the plan.

If the project is not in the conforming plan, the plan must be amended to include the project. The GDOT Air Specialist or Project Manager will need to coordinate with the GDOT Office of Planning and agency officials to obtain an amendment. The project reference number from the amendment will need to be documented once the amendment is adopted.

For projects outside of O₃ non-attainment or maintenance areas, no assessment of this criteria pollutant is required. The Air Specialist must document that the project is in an area of the state that is in attainment for O₃.

MOBILE SOURCE AIR TOXICS

Only federal-aid projects should be analyzed for MSATs. FHWA has developed a three-tiered approach for analyzing MSATs based on the example projects defined within its guidance document:

Updated Interim Guidance on Mobile Source Air Toxic
Analysis in NEPA Documents,
FHWA, January 2023

With this guidance, the Air Specialist will screen the project based on type and traffic volumes to determine which approach is appropriate.

The three tiers include:

1. No analysis for *projects with no potential for meaningful MSAT effects*;
2. Qualitative analysis for *projects with low potential MSAT effects*; and
3. Quantitative analysis to differentiate alternatives *for projects with higher potential MSAT effects*.

Category 1: Projects with No Potential for Meaningful MSAT Effects

Projects in this category include:

- > Projects qualifying as a Categorical Exclusion (CE) under 23 CFR 771.117;
- > Projects exempt under the CAA conformity rule under 40 CFR 93.126; and
- > Other projects with no meaningful impacts on traffic volumes or vehicle mix.

For projects qualifying as CEs or exempt under CAA, no analysis of MSATs is necessary. For other projects with no or negligible traffic impacts, no MSAT analysis is recommended. However, Air Specialist must document the basis for the determination with a brief description of the factors considered. Appendix A of the FHWA guidance includes appropriate language for this discussion.

Category 2: Projects with Low Potential MSAT Effects (Qualitative)

This category includes a broad range of projects, including those that serve to improve the operations of highway, transit or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase emissions.

The Air Specialist will conduct a *qualitative* assessment of emissions projections. According to FHWA guidance, the assessment consists of a narrative that describes the project's expected effect on traffic volumes, vehicle mix, and/or traffic routing. It then describes the associated changes in MSATs for the project alternatives, based on vehicle miles travelled, vehicle mix, and speed. The narrative will also include national trend data that projects the substantial overall reductions to emissions due to stricter engine and fuel regulations issued by the EPA. Appendix B of the FHWA guidance includes specific examples of appropriate language for this assessment.

Examples include:

- > Minor widening projects;
- > A new interchange connecting an existing roadway with a new roadway;
- > A new interchange connecting new roadways; and
- > Minor improvements or expansions to intermodal centers or other projects that affect truck traffic.

These examples typically include projects where design year traffic is projected to be less than 140,000 to 150,000 annual average daily traffic (AADT).

The language should be modified to reflect project-specific information to include in the narrative.

The narrative will also include a discussion of information that is incomplete or unavailable for a specific assessment of MSAT impacts. It should discuss how current scientific techniques, tools, and data are not sufficient to accurately estimate human health impacts from transportation project in a way that would be useful to decision-makers. Appendix C of FHWA’s guidance offers appropriate language for this discussion.

Category 3: Projects with Higher Potential MSAT Effects (Quantitative)

According to FHWA guidance, projects in this category meet a two-pronged test:

- > 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, involving a significant number of diesel vehicles for new projects or accommodating with a significant increase in the number of diesel vehicles for expansion projects; or
- > Create new capacity or add significant capacity to urban highways such as Interstates, urban arterials, or 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; and
- > Be proposed to be located in proximity to populated areas.

Projects falling in this category will require a *quantitative* analysis of MSATs. Per FHWA’s Interim Guidance, the Air Specialist should contact the Office of Natural and Human Environment (HEPN) and the Office of Project Development and Environmental Review (HEPE) in FHWA Headquarters for assistance in developing a specific approach for assessing impacts. FHWA’s Georgia Division and Headquarters will guide the quantitative analysis. In general, the Air Specialist develops a methodology, based on travel demand and road network, and then coordinates it through OES’s Air and Noise Section Manager for review and approval.

Once the methodology is approved, then the MSATs model is run for the quantitative analysis using MOVES software, or a product that incorporates MOVES. The current FHWA Updated Interim Guidance on MSAT Analysis in NEPA documents references the use of MOVES3. However, there have been newer versions of MOVES released after the FHWA interim MSAT guidance. Refer to the *GDOT MOVES Transition White Paper* (September 2024) or consult with GDOT for more details about MOVES versions.

GDOT MOVES Transition White Paper,
GDOT, September 2024

The quantitative analysis will forecast local-specific emission trends of the priority MSAT for each alternative. The analysis may also address the potential for cumulative impacts, where appropriate, based on local conditions. How and when cumulative impacts should be considered would be addressed as part of this assistance. The analysis will also include relevant language on unavailable information, as offered in Appendix C of FHWA's guidance.

If the quantitative analysis indicates meaningful differences in MSAT levels between the alternatives, mitigation options should be identified and considered. Appendix E of FHWA's guidance offers information on mitigation strategies.

Guidebook Revision History

Revision Description	Relevant Sections	Revision Date
Initial Publication	All	5/22/2019
Revision Table Added	Last Page	9/10/2020
Updated Hyperlink Buttons	Carbon Monoxide; Mobile Source Air Toxics	4/26/2021
Updated PM _{2.5} and hyperlink buttons, updated CO and MSAT sections, added GHG and Climate Change section	All	12/06/2024
Removed all discussion of GHGs due to the changes to the 2023 CEQ guidance	Objective, Methodology, GHGs and Climate Change	3/28/2025