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## **425.01 Overview**

WSDOT ensures our projects meet all state and federal air quality requirements.

The Clean Air Act requires conformity determinations for projects in nonattainment and maintenance areas and addresses only criteria pollutants. A conformity determination ensures a project will not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS) set by EPA to protect human health and welfare. Pollutant concentrations can increase, as long as the result does not exceed the standard.

NEPA requires documenting and, as applicable, comparing air quality and energy effects of project alternatives. The NEPA requirement encompasses criteria pollutants, mobile source air toxics (MSAT), greenhouse gases, and energy. In addition, temporary construction emissions (fugitive dust), are evaluated qualitatively for larger projects and WSDOT makes commitments to construction best management practices to reduce fugitive dust emissions through NEPA.

WSDOT policy requires addressing the greenhouse gas emissions and climate change in NEPA documents. This chapter covers greenhouse gas emissions; information on WSDOT climate adaptation and resiliency approach is available on our climate adaptation webpage. Federal policy on considering greenhouse gas emissions under NEPA has changed overtime. Most recently, in 2017, the White House Council on Environmental Quality withdrew its final guidance for federal agencies on how to consider greenhouse gas emissions and the effects of climate change in NEPA documents. Federal Courts, however, are still actively issuing decisions indicating that federal agencies have a responsibility to disclose the contribution of greenhouse gases as a cumulative effect.

## 425.02 Conformity Requirements

Transportation conformity requirements ([40 CFR 93](#)) in the Clean Air Act apply in nonattainment and maintenance areas to ensure that transportation projects do not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS). WSDOT's GIS workbench includes air quality maps showing current nonattainment and maintenance areas.

Transportation projects must be found to conform before they are adopted, accepted, approved, or funded. Projects not exempt from conformity require a conformity determination regardless of the type of NEPA document they are evaluated with.

Conformity must be redetermined for any [FHWA/FTA project](#) if one of the following occurs: a significant change in the [project's design concept](#) and scope, three years elapse since the most recent major step to advance the [project](#), or initiation of a supplemental environmental document for air quality purposes. Major steps include NEPA [process](#) completion, start of final design, acquisition of a significant portion of the right-of-way, and construction (including Federal approval of plans, specifications, and estimates). ([40 CFR 93.104\(d\)](#))

### 425.02(1) Exempt Projects

Projects exempt from conformity are listed in federal and state regulations ([40 CFR 93.126](#) and [WAC 173-420-110](#)). These are mostly projects that maintain existing transportation facilities, improve mass transit, or are considered to have a neutral impact on air quality.

Some projects, like park and ride lots, may reduce regional air emissions but can increase emissions locally, which is why they are exempt from regional but not project-level conformity analysis.

Both the federal and state exempt lists include the category "hazard elimination program" for projects that are normally air quality neutral, like removing rock fallen from the road or replacing guardrails. However, not all projects with hazard elimination program funds are automatically exempt from conformity analysis. For example, if installation of a new traffic signal or re-striping to add new lanes is funded by the program, then conformity analysis is required.

A metropolitan planning organization (MPO), in consultation with partner agencies, may also determine that a project on the exempt list has the potential for adverse emissions impacts and requires analysis.

### 425.02(2) Region-Level Analysis

Regional conformity analysis is conducted by an MPO for their long-range plan and four-year transportation improvement program (TIP) (see [Chapter 200](#)). An MPO must demonstrate through modeling that the emissions from the package of planned projects remain below the motor vehicle emissions budget for the region. If project design concept or scope changes in a way that could affect region-level emissions, the regional-level conformity determination must be updated.

Projects requiring a region-level conformity determination must be included in a conforming plan. See [WAC 173-420-120](#) for projects exempt from regional analysis.

A project conformity determination must identify that the following conditions apply:

- Project is in a conforming program
- Total project is included in the regional analysis and conforming TIP (may still demonstrate conformity through hotspot modeling)
- Project design and scope is not significantly different from the conforming TIP

### **425.02(3) Project-Level Analysis**

Transportation conformity regulations require project-level quantitative, or “hotspot,” determination for nonexempt projects within carbon monoxide (CO) or particulate matter (PM<sub>2.5</sub> or PM<sub>10</sub>) nonattainment and maintenance areas. Exempt projects are listed in [40 CFR 93.126](#) and [40 CFR 93.128](#).

FHWA’s Technical Advisory requires that all project alternatives must be analyzed for the existing year, estimated year of completion, and design year (end year of current transportation plan).

**Carbon Monoxide (CO)** – Transportation conformity regulations require analysis of all intersections with at least a 10 percent increase in volume or a degradation to LOS D or worse with the project.

Refer to the WSDOT Air Quality, Greenhouse Gas, and Energy Guidance for more information on how to complete and document a CO hotspot analysis.

When the total predicted one-hour CO concentrations (standard is 35 ppm) are less than the eight-hour CO standard (9 ppm), no separate eight-hour analysis is necessary.

FHWA has released a [Carbon Monoxide Categorical Hotspot Finding](#) that satisfies project-level conformity requirements for eligible projects. For projects outside the parameters of FHWA’s finding, Washington State Intersection Screening Tool (WASIST) is approved for hotspot analysis throughout the state.

**Particulate Matter (PM)** – A project-level particulate matter (PM<sub>2.5</sub> or PM<sub>10</sub>) conformity determination is required for all nonexempt projects located in particulate matter nonattainment or maintenance areas.

[40 CFR 93.123\(b\)\(1\)](#) requires that the following project types be evaluated through interagency consultation to determine if they are “projects of air quality concern” (POAQC); any project determined to be a POAQC requires a quantitative PM hotspot analysis. These project types include:

- New or expanded highway projects that have a significant number or significant increase in the number of diesel vehicles
- Projects affecting intersections that are at or will change to a Level of Service (LOS) D, E, or F with a significant number of diesel vehicles

- New or expanded bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location
- Projects in or affecting locations, areas, or categories of sites which are identified in the PM<sub>10</sub> or PM<sub>2.5</sub> applicable implementation plan as sites of violation or possible violation

If a project is one of these types, contact the [Air Quality and Climate Policy Specialist](#), who will coordinate the POAQC interagency consultation process.

If the interagency consultation agencies concur that a project meeting one of these definitions is not a POAQC, a hot-spot analysis is not required. A project-level conformity determination is still required for projects determined to not be POAQC. In cases where a hot spot analysis is not required, the documentation should clarify that EPA has determined that projects not listed in [40 CFR 93.123\(b\)\(1\)](#) meet the Clean Air Act's requirements without a hotspot analysis.

### 425.03 NEPA Requirements

NEPA requires documenting and comparing environmental effects of project alternatives for projects that are not categorically excluded. These effects include air quality, energy, and greenhouse gas emissions. The type of analysis and discussion required for a project depends on a variety of project elements, including, but not limited to, location, traffic volume, and documentation type (EA, EIS, etc.).

The WSDOT Air Quality, Greenhouse Gas, and Energy Guidance includes a decision tree to help analysts determine which analyses are required for their project.

In addition to text included in a project's environmental document, a discipline report should be prepared when a quantitative analysis requiring EPA's Motor Vehicle Emissions Simulator (MOVES) is conducted and for most projects requiring an EA or EIS. There may be projects elevated to the EA or EIS level that do not require a full discipline report, such as significant concerns over just one element. In all cases, the level of detail in a discipline report should reflect the complexity of the proposed project.

One discipline report should address all air quality, energy, and greenhouse gas analyses conducted for a project. For each alternative, describe the affected environment, current conformity status, latest planning assumptions, analysis methodology and results, potential operational and construction impacts, recommended mitigation, and the results of any interagency coordination. Refer to the WSDOT Air Quality, Greenhouse Gas, and Energy Guidance for specific information to include in the discipline report and use the WSDOT Air Quality, Greenhouse Gas, and Energy Discipline Report Template to document a project.

Refer to the WSDOT Air Quality, Greenhouse Gas, and Energy web page for more information.

**425.03(1) Criteria Pollutants**

NEPA documentation must include documentation that a project meets all applicable conformity requirements and a full conformity statement.

**425.03(2) Mobile Source Air Toxics (MSATs)**

WSDOT follows the FHWA requirements for MSATs. See their 2018 [Interim Guidance on MSATs](#). Information on how to apply the requirements are available in the WSDOT Air Quality, Greenhouse Gas, and Energy Guidance along with current thresholds and text to include in environmental documentation.

**425.03(3) Greenhouse Gas Emissions (GHG)**

It is WSDOT policy to address climate change and greenhouse gas emissions in our environmental documentation. Find information on WSDOT climate adaptation and resiliency approach on our climate adaptation webpage. The WSDOT [Guidance for Project-Level Greenhouse Gas Evaluations under NEPA and SEPA](#) describes our approach to greenhouse gas emissions. Refer to the WSDOT Air Quality, Greenhouse Gas, and Energy Guidance for details on how to complete these analyses for project operation and construction.

**425.03(4) Energy**

Energy analysis is not typically required for non-EIS level documentation because energy consumption is typically not a key decision-making criterion. More often, other project benefits like congestion reduction, improved travel time, and improvements in level-of-service (LOS) are project goals and reduction of energy consumption is a collateral benefit.

Information on how to complete and document an energy analysis is in the WSDOT Air Quality, Greenhouse Gas, and Energy Guidance document.

**425.03(5) Temporary Construction Effects**

EA and EIS documents must address construction effects:

- For criteria pollutants (including fugitive dust) and MSAT emissions, a simple qualitative description is sufficient.
- Estimate GHG and energy using FHWA's Infrastructure Carbon Estimator (ICE) Tool. Typical projects report construction GHG emissions at both the EA and EIS level. Energy should only be included in EIS-level documents.
- If project construction will last more than five years at one location, additional requirements must be met. This is very rare occurrence; consult with the [Air Quality and Climate Policy Specialist](#) for more information.

Requirements on handling and disposing of asbestos are covered in [Chapter 447](#).

### **425.03(6) Fugitive Dust**

For projects involving earthwork, construction plans and specifications should be evaluated to identify possible dust producing activities and appropriate best management practices (BMPs). BMPs are required for all WSDOT projects per our [Memorandum of Agreement with the Puget Sound Clean Air Agency](#).

BMPs prevent or reduce fugitive dust emissions. Common methods are outlined in the [Guide to Handling Fugitive Dust from Construction Projects from Construction Projects](#) by the Associated General Contractors (AGC) of Washington and are not mutually exclusive. In summary, the BMPs

- Limit creation or presence of dust-sized particles. Cover exposed surfaces, use dust suppressants, install erosion control, minimize surface disruptions, pave dirt access roads, reschedule “dusty” work with consideration to wind and weather, reduce vehicle speeds, minimize spills.
- Reduce wind speed at ground level.
- Bind dust particles together. Apply flocculating agents, spray water.
- Remove and capture fugitive dust from the source. Filter fabric around catch basin, street sweepers, wheel wash, vehicle scrape.

Although water can be one of the main control agents for dust, it is important to plan ahead for water shortages and consider the use of other measures.

### **425.03(7) Mitigation**

The analysis should describe any recommended mitigation measures and commitments to stakeholders for the design, construction, and post-construction phases. The analysis should also describe whether additional mitigation measures were considered and why these were not included.

## **425.04 Modeling Requirements**

EPA requires all conformity emissions modeling be done with their Motor Vehicle Emissions Simulator Model (MOVES) at both the regional and project level.

EPA has approved the use of the Washington State Intersection Screening Tool (WASIST) for CO hot-spot analysis because it is based on the current version of MOVES (MOVES2014). Projects that pass using WASIST do not need to conduct dispersion modeling. Recent updates to EPA’s [Appendix W](#) allows for CO dispersion screening analysis using CAL3QHC (only needed if the project fails WASIST analysis).

For PM dispersion analysis or a refined CO analysis, EPA requires AERMOD be used.

MSAT and operational GHG analyses are conducted using MOVES. See the WSDOT Air Quality, Greenhouse Gas, and Energy Guidance for more information on MOVES inputs and documentation.

WSDOT recommends using the FHWA (ICE) tool for construction and maintenance greenhouse gas emissions and energy use.

## 425.05 Permits and Approvals

Regional clean air agencies may require air quality permits for the following activities:

- Land clearing burns.
- Demolition of structures containing asbestos.
- Asphalt batching, mixing concrete, crushing rock, or other temporary sources (new source construction).

## 425.06 Multi-Modal and Non-Road Requirements

Rail, ferry, and aviation projects require a different type of conformity analysis (general conformity). Consult the [Air Quality and Climate Policy Specialist](#) for assistance on these types of projects.

Requirements for roadways serving ferry and aviation facilities are similar to highway projects.

## 425.07 Statutes, Regulations, and Guidance

U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), and regional clean air agencies regulate ambient air quality in Washington. Permits and approvals required pursuant to these statutes are listed in [Section 425.05](#).

### 425.07(1) *Federal*

- National Environmental Policy Act (NEPA) [42 USC 4321-4370](#) and federal implementing regulations [23 CFR 771](#) (FHWA) and [40 CFR 1500-1518](#) (CEQ).
- Clean Air Act (CAA) [42 USC 7401-7431](#) et seq. and [Clean Air Act and Amendments](#) (CAAA) of 1990.
- [40 CFR 93](#) Federal conformity regulations, including exempt projects in [40 CFR 93.126](#).
- [23 CFR 450](#) FHWA regulations for statewide and metropolitan transportation planning and programming are defined in Planning Assistance and Standards
- FHWA [Technical Advisory T 6640.8A](#) for NEPA documents.
- President's [Executive Order 13423](#) *Strengthening Federal Environmental, Energy, and Transportation Management*.
- U.S. Department of Transportation Guidance on Fuel Consumption and Air Pollution, including [USDOT Order 5610.1C](#), *Energy Requirements for Transportation Systems*, and *Procedure for Estimating Highway User Costs, Fuel Consumption, and Air Pollution*.

**425.07(2) State**

- State Environmental Policy Act (SEPA) and state implementing regulations [WAC 197-11](#) and [WAC 468-12](#).
- Washington Clean Air Act, [RCW 70.94](#).
- [WAC 173-420](#) state conformity regulations, including exempt projects in [WAC 173-420-110](#) and [WAC 173-420-120](#).
- [WAC 173-400-040\(9\)](#) state fugitive dust regulations.
- [RCW 39.35](#) requires that new “major facility projects” achieve the Leadership in Energy and Environmental Design (LEED) silver building rating standard.
- WSDOT Guidance – [Project-Level Greenhouse Gas Evaluations under NEPA and SEPA](#)

**425.07(3) Regional**

- [Memorandum of Agreement on Fugitive Dust From Construction Projects \(1999\)](#) between WSDOT and the Puget Sound Clean Air Agency (PSCAA).
- [Guide to Handling Fugitive Dust from Construction Projects \(1997\)](#) from Construction Projects by the Associated General Contractors (AGC) of Washington

**425.08 Abbreviations and Acronyms**

AADT	Average Annual Daily Traffic
BMP	Best Management Practices
CAA	Clean Air Act (Federal)
CAAA	Clean Air Act Amendments
CAWA	Clean Air Washington Act
CEQ	Council on Environmental Quality
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
GHG	Greenhouse Gas
LOS	Level of Service
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxic
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO <sub>x</sub>	Nitrogen Oxides
O <sub>3</sub>	Ozone
PM <sub>10</sub>	Course particulate matter, smaller than 10 micrometers in diameter
PM <sub>2.5</sub>	Fine particulate matter, smaller than 2.5 micrometers in diameter
POAQC	Project of air quality concern
SEPA	State Environmental Policy Act (for Washington)

SIP	State Implementation Plan
SO <sub>2</sub>	Sulfur Dioxide
TCM	Transportation Control Measure
TIP	Transportation Improvement Program
VMT	vehicle miles traveled

## 425.09 Glossary

**Air Quality Analysis** – An evaluation of various air pollutants at the project level based on specific project location and type. This evaluation should include discussion of construction phase emissions such as fugitive dust, odors, and asbestos if applicable. This evaluation may include discussion of other air related concerns identified in project development.

**Average Annual Daily Traffic (AADT)** – The estimated average daily number of vehicles passing a point or on a road segment over the period of one year.

**Carbon Monoxide (CO)** – A by-product of the burning of fuels in motor vehicle engines. Though this gas has no color or odor, it can be dangerous to human health. Motor vehicles are the main source of carbon monoxide, which is generally a wintertime problem during still, cold conditions.

**Conformity** – Projects are in conformity when they do not (1) cause or contribute to any new violation of any standards in any area, (2) increase the frequency or severity of any existing violation of any standard in any area, or (3) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

**Construction GHG Emissions** – Primarily GHG emissions from the fuel used by the equipment that builds the project.

**Criteria Pollutants** – Carbon monoxide, sulfur dioxide, particulate matter, ground level ozone, lead, and nitrogen dioxide.

**Embodied GHG Emissions** – GHG emissions generated from the energy used to extract materials, fabricate them for construction, and transfer them to construction site. Embodied GHG emissions are also referred to as “cradle to site” GHG emissions.

**Exempt Projects** – Listed in federal and state regulations ([40 CFR 93.126](#) and [WAC 173-420-110](#)), these are mostly projects that maintain existing transportation facilities or are considered to have a neutral impact on air quality. See also [WAC 173-420-120](#) for projects exempt from regional analysis.

**Fugitive Dust** – Particulate matter that is suspended in the air by wind or human activities and does not come out of an exhaust stack.

**Greenhouse Gases (GHG)** – Greenhouse gases absorb and emit radiation within the thermal infrared range. Common GHGs in the Earth’s atmosphere include water vapor, carbon dioxide, methane, nitrous oxide, ozone, and chlorofluorocarbons.

**Hot-Spot Analysis** – Estimate of localized CO, PM<sub>2.5</sub>, and PM<sub>10</sub> pollutant concentrations and a comparison of those concentrations to the National Ambient Air Quality Standards. Uses an air quality dispersion model to analyze the effects of emissions on air quality near the project. (See [40 CFR 93.101](#) and [40 CFR 93.116](#).)

**Lifecycle GHG Emissions** – Referred to as “cradle to grave emissions” that include embodied GHG emissions and GHG from energy used to demolish and/or dispose of materials after completion of usable life.

**Maintenance Area** – Area previously in nonattainment now in compliance with NAAQS and under a maintenance plan. Areas previously in nonattainment must be under a maintenance plan for 20 years after regaining compliance with the standard.

**Metropolitan Transportation Improvement Program (MTIP)** – A fiscally constrained prioritized listing or program of transportation projects covering a period of four years and formally adopted by an MPO in accordance with [23 CFR 450](#), as required for all regionally significant projects and projects requesting federal funding.

**Mobile Source** – Any nonstationary source of air pollution such as cars, trucks, motorcycles, buses, airplanes, and locomotives.

**Mobile Source Air Toxic (MSAT)** – A priority group of nine volatile gases or small particulate compounds coming from the tailpipe of a vehicle: 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. EPA has determined that these compounds have significant contributions from mobile sources and contribute to cancer and non-cancer health problems.

**Nonattainment Area** – An area that does not meet one or more of the NAAQS for the criteria pollutants designated in the Clean Air Act.

**Operational GHG Emissions** – “Tailpipe” GHG emissions from vehicles using the project facility or nearby facilities affected by the project.

**Ozone (O<sub>3</sub>)** – Ground level ozone forms in the atmosphere as a result of complex sunlight activated chemical transformations between nitrogen oxides (NO<sub>x</sub>) and hydrocarbons (i.e., O<sub>3</sub> precursors).

**Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)** – Particles with a diameter of less than 10 microns or 2.5 microns, respectively. Sources of particulate matter include sea salt, pollen, smoke from wild fires and wood stoves, road dust, industrial emissions, and agricultural dust. These particles are small enough to be drawn deep into the lungs where they can contribute to a variety of respiratory and cardiovascular health problems.

**Project of Air Quality Concern (POAQC)** – POAQCs located in PM nonattainment and maintenance areas require a quantitative hot-spot analysis. EPA has identified the following categories of projects that maybe projects of air quality concern: New or expanded highway projects that have a significant number or significant increase in the number of diesel vehicles. Projects with intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles. New or expanded bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.

**Regionally Significant Project** – A nonexempt transportation project that serves regional transportation needs, major activity centers in the region, major planned developments, or transportation terminals, and most terminals. Such projects are normally included in the modeling of a metropolitan area’s transportation network, including, at a minimum, all principal arterial highways and all fixed guide way transit facilities that offer an alternative to regional highway travel ([40 CFR 93.101](#)).

**Regional Transportation Improvement Program (RTIP)** – A fiscally constrained prioritized listing/program of transportation projects for a period of six years that is formally adopted by a Regional Transportation Planning Organization in accordance with [RCW 47.80](#), as required for all regionally significant projects and projects requesting federal funding.

**State Implementation Plan (SIP)** – Required by federal law ([40 CFR Part 51](#)), this state plan describes how the state will meet and maintain compliance with the National Ambient Air Quality Standards (NAAQS). Specific plans are developed when an area does not meet the NAAQS and include controls to quickly reduce air pollution in a nonattainment area and provide controls to keep the area in compliance. WSDOT projects must conform to the SIP before the FHWA and the EPA can approve construction.

**Transportation Improvement Program (TIP)** – A staged, multiyear program of multimodal transportation projects covering a metropolitan planning area consistent with the state and metropolitan transportation plan and developed pursuant to [23 CFR 450](#). The entire program must conform to the NAAQS before any federal funding can be used for nonexempt projects.

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