

2018

PROGRAM
IMPLEMENTATION &
ANALYSIS UNIT

CONGESTION MITIGATION & AIR QUALITY (CMAQ) GUIDELINES

Effective February 2018



1. Overview & Organization

The Congestion Mitigation and Air Quality (CMAQ) Program is a federal-aid funding source for transportation projects and programs that reduce traffic congestion and contribute to air quality improvements, including tangible reductions of carbon monoxide, ozone precursors, or particulate matter pollution. CMAQ funds are apportioned annually to each State according to the severity of its air quality problems. The state determines how funds are allocated.

In 2017, Oregon revisited the distribution of CMAQ funds, working in cooperation with eligible Metropolitan Planning Organizations (MPOs) and cities. A new allocation formula was developed for MPOs and cities, to be applied in fiscal year (FY) 2019 and beyond. The CMAQ Guidelines provides an overview of how CMAQ funds are allocated, applied to transportation projects, and reported to state and federal agencies.¹

Organization

CMAQ Guidelines are organized into six sections as follows:

- Section 1:** Overview and Organization
- Section 2:** Annual Allocation to Eligible Recipients
- Section 3:** Project Eligibility & Selection
- Section 4:** MTIP & STIP Programming
- Section 5:** Project Delivery & Amendments
- Section 6:** Performance Measures

a. Roles and Responsibilities

The CMAQ program in Oregon is collaboratively managed between federal agencies, ODOT, Metropolitan Planning Organizations, and Local Public Agencies (LPAs). ODOT allocates CMAQ funds to eligible Metropolitan Planning Organizations (MPOs) and rural cities, who then decide how best to invest CMAQ funds within the parameters set by ODOT. MPOs manage their own selection process while rural cities work directly with ODOT. ODOT confirms program eligibility for all CMAQ projects in Oregon, with final concurrence from FHWA.

The table below highlights key stakeholders and their role in the CMAQ process.

¹ The Federal Highway Administration provides additional [guidance, tools, and frequently asked questions](#) for CMAQ.

CMAQ Guidelines

Position	Roles
CMAQ Program Manager	Responsible for overall management, oversight, and direction of CMAQ program. Primary point of contact for CMAQ funding, policy, performance reporting, and legislative issues. Approves CMAQ project eligibility from MPOs and LPAs, including project amendments.
ODOT CMAQ Program Analyst	Manages day-to-day operations, data-entry, tracking, and periodic reporting for CMAQ program. Works with ODOT Regions, MPOs, and LPAs to ensure accuracy of reporting data.
ODOT Technical Services (Geo-Environmental)	Provides technical support to CMAQ Program Manager for emissions calculations. Coordinates with CMAQ Program Manager to establish emissions performance targets.
Metropolitan Planning Organizations (MPOs)	Responsible for managing CMAQ funding portfolio in respective region. Manages regional selection processes in respective jurisdiction, including certifying project eligibility to ODOT for determination, MTIP programming, and CMAQ portfolio management. Reports CMAQ project information to ODOT.
ODOT Local Agency Liaisons (LAL)	Primary point of contact for LPAs on project delivery process and issues. Advise LPAs eligible project uses for CMAQ funding, program requirements, project scope, and cost estimation. Coordinates Intergovernmental Agreement (IGA) development between ODOT and LPA.
ODOT Program & Funding Services	Manages STIP process and CMAQ fund programming.
Local Public Agencies (LPAs)	Manages delivery of respective CMAQ project. Reports progress and issues to LAL.
FHWA	Approves overall MTIP & STIP, including CMAQ project eligibility. Receives CMAQ performance reporting from ODOT.

CMAQ Guidelines

2. Annual Allocation to Eligible Recipients

The Oregon Transportation Commission (OTC) has the discretion on how to allocate CMAQ funds in Oregon. Oregon's annual apportionment is based on a formula that includes the population of each Carbon Monoxide (CO) nonattainment or maintenance area multiplied by a CO pollutant-weighting factor. The Federal Highway Administration (FHWA) determines the non-attainment and maintenance areas where CMAQ funds can be used.

The following agencies are eligible to receive annual CMAQ funding allocations:²

MPO Recipients	Local Public Agencies
Portland Metro	City of Klamath Falls
Salem-Keizer	City of La Grande
Central Lane	City of Lakeview
Rogue Valley	City of Oakridge
Middle Rogue	

The Oregon Legislature directed \$250,000 per year of CMAQ funding to the Department of Environmental Quality (DEQ) for diesel retrofits. DEQ funding is taken off-the-top prior to MPO and LPA allocations. DEQ projects are included in the MTIP if inside MPO boundaries.

a. Allocation Formula for MPOs

MPOs receive 97% of the annual CMAQ funding. The current allocation formula for MPOs is based 80% on level of impact (or population) and 20% on complexity factors. MPOs receive a percentage of the remaining available funds based on the agreed upon 2017 allocation formula. The allocation of CMAQ funds to the MPOs is shown in the table below.³

Metropolitan Planning Organization	Approximate Annual Allocation (%)
Portland Metro	73
Salem-Keizer	9
Central Lane	9
Rogue Valley	6
Middle Rogue	3

² The Oregon Department of Environmental Quality provides further information on [air quality maintenance and non-attainment areas](#) in Oregon on their website.

³ Actual percent values may vary by a percentage point based on the allocation formula.

CMAQ Guidelines

When the CMAQ funding distribution was modified in 2017, an agreement was reached to phase funding down for Rogue Valley MPO, to their actual allocation after five years. This “bridge funding” raises Rogue Valley’s initial allocation to around 8.5 percent in FY 2019, and then slowly lowers it to 6 percent in 2023.

b. Allocation Formula for LPAs

Beginning October 1, 2018, 3% of the statewide total CMAQ funding is set aside annually for Non-MPO recipients. Klamath Falls receives an annual fund allocation, while the other cities receive an allocation every third year. This section will be updated following further discussions with LPA recipients

c. Allocation Process

The table below details the process steps for annual CMAQ fund forecast and allocation.

Step	Description
1	ODOT Program & Funding Services (PFS) forecasts CMAQ funds available
2	CMAQ Program Manager determines MPO & LPA allocation
3	CMAQ Program Manager communicates CMAQ forecast to MPOs & LPAs
4	CMAQ Program Manager communicates actual amounts to MPOs & LPAs upon receipt from FHWA (October)

3. Project Eligibility & Selection

After CMAQ funds are forecasted and allocated annually, MPOs and LPAs must choose which projects to actually fund. This section details project eligibility as well as the process steps for both MPO-selected and LPA-selected CMAQ projects.

Each CMAQ-eligible area has the opportunity to determine how best to utilize the CMAQ funding within project eligibility requirements (described below), but ODOT is ultimately responsible to ensure all federal funds in Oregon are used in accordance with applicable federal requirements.⁴ ODOT determines eligibility for CMAQ projects and reports annually to FHWA on the air quality benefits gained with the CMAQ funds in Oregon.

a. Project Eligibility

CMAQ projects must meet the following criteria:

1. Must be a transportation project
2. Must generate a transportation emission reduction for specific pollutants
3. Must be located in or benefit a non-attainment or maintenance area
4. Must be consistent with a long-range transportation plan and conform to the requirements of the Clean Air Act
5. Must be included in the MTIP (MPOs) or STIP (LPAs)

FHWA identifies 20 different project types for eligible use of CMAQ funds, but states have discretion as to how projects are prioritized for funding. ODOT and the OTC narrowed the list of projects eligible for funding in Oregon and set program criteria for project selection. The narrowed project types support state transportation policy goals, MPO's priorities, and have a measurable impact on air quality improvements. CMAQ recipients in Oregon are required to select projects under the seven categories defined in the table below, which include specific type of allowable projects.⁵

Allowable Project Types & Examples	
1. Public Transportation Improvements	<ul style="list-style-type: none">• Capital projects:<ol style="list-style-type: none">a. Transit stop infrastructure to support increased use of buses and trainsb. Bus pullouts to improve roadway traffic flow and enhance transit rider safety

⁴ ODOT's stewardship responsibilities for federal funds are established in the [ODOT-FHWA Stewardship and Oversight Agreement](#).

⁵ The original list approved by the OTC is available in the document "[Narrowed List of Eligible CMAQ Projects](#)"

	<ul style="list-style-type: none"> c. Fixed guideways or tracks for high-capacity transit improvement to reach more riders • Capital purchases, including: electric or alternative fuel transit vehicles with no or low emissions • Operational improvements: <ul style="list-style-type: none"> a. New or expanded service to reach transportation disadvantaged populations and others b. Increased frequency of existing routes to increase service capacity and accommodate a broader array of potential riders
2. Transportation Option Strategies	<ul style="list-style-type: none"> • Program Support for Transportation Management Associations working on geographic-specific congestion issues • Employer-based programs that support alternative work schedules, telecommuting, bus passes, and carpooling. • Safe Routes to School education and encouragement programs that help kids safely use the transportation system or foster interest in taking the bus, biking, or walking, which helps reduce school-related congestion. Preferred priority towards Title I schools • Targeted transportation options (education and outreach), making people, employees, or students aware of new, enhanced, or existing transit service and biking and walking opportunities • Traveler information to support awareness of travel choices and help people plan ahead to use public transit or other modes • Vanpool/rideshare operations and capital expenses so people can rideshare rather than drive alone to and from work or school • Congestion pricing to send a monetary signal to roadway users on the cost of congestion and impacts in an effort to lessen worsening congestion
3. Pedestrian and Bicycle Infrastructure	<ul style="list-style-type: none"> • Stand-alone on-road bicycle and pedestrian projects that complete gaps or address biking or walking mobility issues near transit, schools, downtowns, employment centers, shopping and to medical services to provide people with the ability to use these modes to reach critical destinations and services⁶ • Off-road paths within and connecting communities that provide a statewide benefit according to the Regional Paths policy (2.5D) of the Oregon Bicycle and Pedestrian Plan
4. Vehicle and Fuel Efficiency	<ul style="list-style-type: none"> • Diesel engine retrofits of school buses and government fleet vehicles to cost-effectively improve air-quality (according to

⁶ ORS 366.514 requires footpaths and bicycle trails whenever a highway, road, or street is being constructed, reconstructed, or rebuilt with state highway fund dollars. CMAQ funds cannot be used to satisfy ORS 366.514 requirements.

CMAQ Guidelines

Efforts	FHWA) <ul style="list-style-type: none"> • Electric charging station infrastructure to encourage no-emission vehicle use • Compressed Natural Gas (CNG) or Recycled Natural Gas (RNG) fueling stations and infrastructure to encourage low-emission vehicle use • Vehicle purchases for government fleets, including: electric and alternative fuel vehicles with low or no emissions
5. Intelligent Transportation Systems for congestion reduction	<ul style="list-style-type: none"> • Signal synchronization to improve traffic flow, with fewer stops and starts • Multi-modal traveler information to share information on crashes and detours and reduce intermittent delay that negatively impacts air quality • Electronic toll collection systems to implement congestion pricing as discussed above • Incident clearance equipment and management programs to help reduce intermittent delay
6. Traffic Flow Improvements for congestion reduction	<ul style="list-style-type: none"> • Transit signal priority systems • High-Occupancy Vehicle (HOV) or High-Occupancy Toll (HOT) lanes • Turn lane additions/improvements and intersection modifications when a threshold – such as Volume-to-Capacity (V/C) – is reached. Projects must mitigate existing congestion and be reviewed by ODOT Transportation Planning and Analysis Unit.
7. Road Dust Mitigation to remove fine particulates (LPA Recipients and PM10 MPOs only)	<ul style="list-style-type: none"> • Gravel street paving • Street sweeper purchase

b. Exception Process

MPOs and LPAs that have an identified project outside the eligible project types or varying from the descriptions above should contact the CMAQ Program Manager in advance for approval. The MPO or LPA must articulate why a project outside the approved list should be funded, including context, needs, and potential air quality benefits, and make a determination if an exception is appropriate. Exceptions to the narrowed project list provided will be limited and are approved by the CMAQ Program

CMAQ Guidelines

Manager on a case-by-case basis only.

c. Requirements for Application

All CMAQ project applications⁷ need to be submitted to CMAQ@odot.state.or.us for CMAQ Program Manager approval.

CMAQ recipients: Submit the following information (as applicable) in a single document to ODOT:

- Narrative showing how each project meets general CMAQ eligibility conditions, identifies project type (See Allowable Project Types table), and describes project scope
- Quantitative analysis of air quality benefits to be derived from project implementation (see Air Quality Improvement Calculations). Qualitative analysis may be used in certain cases but is not preferred and requires additional concurrence and a reason for not providing quantitative analysis.⁸
- Total project cost, including CMAQ funding, local match, other funding sources.⁹
- Itemized budget; project start date; expected billing start date; estimated completion date.
- Map showing the project location with an appropriate level of detail
- Overview of public process and criteria used during project selection

MPOs: In this process, MPOs are certifying to ODOT that each project they have selected meets CMAQ eligibility. MPOs should only submit information for projects that will be programmed in the MTIP and funded. Do not submit unfunded reserve projects for review (i.e. submit a 100% list to ODOT and not a 150% or more list).

LPAs: Unlike MPO-selected projects, LPA CMAQ recipients work directly with ODOT to identify, select, and approve CMAQ projects. The information for both MPO and LPA process is essentially the same, but ODOT is more directly involved in the LPA process.

d. Air Quality Improvement Calculations

CMAQ funding is available to reduce traffic congestion and improve air. Projects must demonstrate a marked improvement in air quality, with federal guidance suggesting

⁷ The CMAQ Program Manager can provide examples of past materials as available.

⁸ Recipients must provide a reasoning for reporting a qualitative benefit rather than a quantitative analysis that ODOT can enter into the federal CMAQ database (UPACS) with its annual report. Qualitative analysis is accepted on a case-by-case basis.

⁹ Submitted documentation should be clear which project elements are CMAQ eligible and which are not, if applicable.

CMAQ Guidelines

that cost-effectiveness (i.e. volume of emission reductions for cost of project) be considered.¹⁰

MPOs conduct their own air quality improvement calculations for projects they select with CMAQ funds. FHWA provides tools to calculate air quality improvements for some project types, which are available on the [CMAQ Emissions Calculator Toolkit website](#). ODOT reviews and validates MPO air quality assessments when confirming project eligibility.

ODOT Technical Services can assist LPA recipients in calculating air quality improvements for identified projects. LPA recipients should contact the CMAQ Program Manager for more information.

e. MPO Selection Process

Each MPO recipient conducts its own call for projects and selection process. Decisions regarding project prioritization and final selection are the responsibility of the MPOs. Each MPO is granted the autonomy to develop its own project selection criteria within the parameters of program eligibility, and therefore the process varies from area to area. However, the selection and prioritization processes need to be well documented and publicly available. The basic MPO selection process steps are outlined below:

Step	Description
1	MPO staff identify potential projects (LPAs in region make funding requests)
2	MPO screens project eligibility, selects projects, and provides CMAQ Program Manager the 100% list of projects to be funded (reserve projects will not be reviewed at this stage)
3	CMAQ Program Manager coordinates air quality mitigation validation; Works with Technical Services and MPOs to answer questions
4	CMAQ Program Manager makes final eligibility determination; sends to FHWA
5	CMAQ Program Manager send findings to FHWA for concurrence with CMAQ project eligibility
6	CMAQ Program Manager notifies MPOs of accepted projects

f. LPA Selection Process

[Reserved]

¹⁰ FHWA provides additional [guidance and tables for CMAQ cost-effectiveness](#).

4. MTIP & STIP Programming

Projects selected for CMAQ funding must be added to the respective MTIP and STIP for MPO recipients and the STIP for LPA recipients. Once programmed in the STIP, Regions and recipients can begin the Intergovernmental Agreement (IGA) process. After ODOT and the CMAQ recipient have signed an IGA, ODOT will request FHWA approval to obligate CMAQ funds. ODOT Active Transportation Section will then inform the ODOT LAL and recipient to begin invoicing ODOT for CMAQ expenses. The basic process steps are shown in the table below.

Programming & IGA Process	
1a	MPO Process: MPO staff program CMAQ projects into MTIP; notifies Region STIP Coordinator
1b	LPA Process: [Reserved]
2	LAL starts IGA process
3	Region sends IGA to recipient
4	Region requests obligation CMAQ funds for project from PFS
5	PFS requests approval to obligate CMAQ funds for project from FHWA
6	FHWA approves obligation
7	PFS sends Notice to Proceed to Region with a copy to MPO; establishes Expense Account for project
8	Region notifies recipient of approval to start invoicing CMAQ project expenses

a. CMAQ Projects with Transit Agencies

CMAQ projects awarded to transit agencies may be eligible to have their CMAQ funds transferred to FTA for direct receipt. The FTA transfer process eliminates the need for an Intergovernmental agreement between ODOT and the local agency. The basic process steps are for the transit agency to request from FTA that CMAQ funds be transferred to FTA, at which point FTA, FHWA, and ODOT Program & Funding Services coordinate the transfer. Once the transfer is complete, the transit agency will work directly with FTA. Air quality calculations and project type requirements still apply for FTA transfer projects.

CMAQ Guidelines

5. Project Delivery & Amendments

CMAQ projects are delivered by either the LPA (if certified to deliver a federal-aid project or through the State Funded Local Projects process) or by the ODOT Region. MPOs and the CMAQ Program Manager monitor overall CMAQ funding and help resolve issues. MPOs are responsible for tracking CMAQ projects and balances in their area and managing their CMAQ allocation. The project delivery process steps are outlined below.

Delivery & Oversight Process	
1	LPA expends funds; seeks reimbursement by invoice from ODOT Region
2	LAL reviews invoice; coordinates payment in accordance with ODOT & FHWA process
3	MPO monitors CMAQ balance against financial plan
4	LPA sends monthly project progress report to CMAQ@odot.state.or.us
5	LPA sends final invoice for payment and any closeout documentation
6	LAL conducts final inspection
7	LAL notifies PFS of project closeout

In the event that project scope, schedule, or budget changes requires an amendment to the project Intergovernmental Agreement, CMAQ recipients should follow the process below.

IGA Amendments	
1	LPA and/or LAL identifies need for amendment
2	LAL notifies CMAQ Program Manager of amendment (if eligibility determination required)
3	CMAQ Program Manager determines eligibility; approves amendment
4	CMAQ Program Manager seeks FHWA concurrence on eligibility
5	LAL coordinates amendment process following Region procedure in collaboration with LPA

a. Project Change Requests

ODOT expects MPOs to manage their annual CMAQ funds and keep track of CMAQ funds applied to projects; schedule and budget changes should therefore be handled between the project team and the MPO, unless they impact CMAQ eligibility. Project Change Requests for MPO-selected projects require CMAQ Program Manager Review for changes impacting CMAQ eligibility. For example, scope changes that potentially

CMAQ Guidelines

alter air quality benefit calculations on a previously approved project or adding CMAQ funds to a project that did not have CMAQ funds before requires CMAQ Program Manager approval.

Project Change Requests for LPA-selected projects require CMAQ Program Manager approval for all scope, schedule, and budget changes leading to an IGA amendment and potential impacts to CMAQ eligibility.

b. Funding Obligation

Oregon must obligate all federal funds programmed each year, regardless of funding type. ODOT therefore expects that all CMAQ funds programmed in a given year will be obligated, both for MPO- and LPA-selected projects.

MPOs that cannot obligate programmed projects in a given year can work with ODOT's Program and Funding Services to identify other CMAQ recipients that can obligate the extra CMAQ funds.

6. Performance Measures

Federal law¹¹ requires ODOT and MPOs to monitor and report on performance measures for traffic congestion and on-road mobile source emissions for the purpose of carrying out the CMAQ Program. The US DOT established the three performance measures for assessing the CMAQ program shown in the table below.¹²

CMAQ Performance Measures		Applicable MPOs
Traffic Congestion Measures	Peak Hour Excessive Delay: Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita	Metro
	Non-Single Occupancy Vehicle Travel: Percent of Non-Single Occupancy Vehicle (SOV) Travel	Metro
On-Road Mobile Source Emissions Measure	Emission Reductions: 2- and 4-year Total Emission Reductions for each applicable criteria pollutant and precursor	Metro, Central Lane, Rogue Valley, Middle Rogue, Salem-Keizer

ODOT will report statewide baseline performance and targets in the first baseline performance period report due October 1, 2018. The first performance period for the following measures begins October 1, 2018, and ends on September 30, 2022. ODOT will establish a 2- and 4- year target, as applicable, by May 20, 2018, for the first performance period. MPOs have 180 days to either support ODOT’s target or establish their own quantifiable targets.¹³

a. Peak Hour Excessive Delay (PHED) Measure

Traffic congestion is measured by the annual hours of peak hour excessive delay (PHED) per capita on the National Highway System. Excessive delay is based on the travel time at 20 miles per hour or 60% of the posted speed limit travel time, whichever is greater, and is measured in 15-minute intervals. Peak travel hours are defined as 6-10 a.m. local time on weekday mornings; the weekday afternoon period is 3-7 p.m. or 4-8 p.m. local time. The total excessive delay metric is weighted by vehicle volumes and occupancy.

¹¹ 23 CFR Part 490 (Sections 490.707 and 490.807)

¹² Additional information on CMAQ performance measures available on [FHWA’s CMAQ webpage](#).

¹³ FHWA published a reference document on October 1st, 2017 titled, “[Applicability Determination: CMAQ Traffic Congestion and CMAQ On-Road Mobile Source Emissions Measures](#).”

CMAQ Guidelines

Applicability: Urbanized areas of more than 1 million people that are also in nonattainment or maintenance areas for ozone, carbon monoxide or particulate matter. ODOT must establish a 4-year target. Applicable MPOs must develop a performance plan and submit to ODOT for inclusion in baseline report.

Effective January 1, 2022, the population threshold is more than 200,000. ODOT coordinates and reports on a single, unified target for this measure.

b. Non-SOV Travel Measure

There are three options to calculate modal share. A minimum option for measurement will be use of the American Community Survey (ACS) Commuting (Journey to Work) data from the U.S. Census Bureau. Localized surveys are also acceptable.

Volume/usage counts for each mode to determine the percent non-SOV travel, and will be encouraged to report any data not available in national sources today (such as bike counts) to FHWA.

Applicability: Urbanized areas of more than 1 million people that are also in nonattainment or maintenance areas for ozone, carbon monoxide or particulate matter. ODOT must establish a baseline performance along with 2- and 4-year targets. Applicable MPOs must develop a performance plan and submit to ODOT for inclusion in baseline report.

Effective January 1, 2022, the population threshold is more than 200,000. ODOT coordinates and reports on a single, unified target for Oregon on this measure.

c. Emissions Reductions Measure

Total emissions reduction is calculated as the sum of 2- and 4-year totals of emissions reductions of applicable criteria pollutant and precursor, in kilograms per day, for all projects funded with CMAQ funds. The 2018 baseline for Oregon is the sum of all CMAQ estimated emission reductions in each of the pollutants from 2013-17 projects.

Applicability: ODOT and all CMAQ-recipients.

d. Performance Plan

MPOs that serve a TMA of 1 million or in population (i.e., Metro) in maintenance or non-attainment must submit a biennial performance plan to ODOT for all measures. The performance plan will include the following, as applicable:

1. Baseline levels for traffic congestion and on-road mobile source emissions for which the area is in nonattainment or maintenance

CMAQ Guidelines

2. A progress report on achievements in reaching performance targets described in 23 U.S.C. 150(d)
3. A description of the projects identified for CMAQ funding and a projection of how these projects will contribute to achieving the emission and traffic congestion reduction targets developed pursuant to 23 U.S.C. 150(d)
4. A separate report assessing the progress of the projects under the previous plan in achieving the air quality and congestion targets of the previous plan

The performance plan will be submitted to ODOT for inclusion in ODOT's annual report to FHWA.