U.S. Department of Transportation
Federal Highway Administration

Memorandum

Subject: **ACTION:** Congestion Mitigation and Air Quality Improvement (CMAQ) Program Interim Guidance as Revised by the Infrastructure Investment and Jobs Act

Date: October 28, 2024

From: Emily Biondi
Associate Administrator for Planning, Environment and Realty

In Reply Refer To:
HEP-1

To: Division Administrators
Director of Field Services

On November 15, 2021, the President signed the Bipartisan Infrastructure Law" (BIL) (Public Law 117-58, also known as the "Infrastructure Investment and Jobs Act" (IIJA)) into law. The BIL authorizes the Congestion Mitigation and Air Quality Improvement (CMAQ) Program at 23 United States Code (U.S.C.) 149 to fund transportation projects and programs that reduce mobile source emissions in air quality nonattainment and maintenance areas. The attached CMAQ Program Interim Guidance provides information on funding, eligible activities, and requirements of the CMAQ Program.

Except for the statutes and regulations cited, the contents of this document do not have the force and effect of law and are not meant to bind the States or the public in any way. This document is intended only to provide information regarding existing requirements under the law or agency policies.

This document will be accessible on the CMAQ Website (FHWA CMAQ Website) the BIL Website (FHWA Bipartisan Infrastructure Law Website), and through the Policy and Guidance Center (FHWA Policy and Guidance Center). If you have questions, please contact: Cecilia Ho (202-366-9862 or Cecilia.Ho@dot.gov) or Karen Perritt (202-366-9066 or Karen.Perritt@dot.gov) of the Office of Natural Environment.

The Congestion Mitigation and Air Quality Improvement (CMAQ) Program
Interim Guidance

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I. OVERVIEW

A. CMAQ Program Purpose

The Bipartisan Infrastructure Law (BIL), enacted as the "Infrastructure Investment and Jobs Act" (IIJA) (Public Law 117-58), continues the Congestion Mitigation and Air Quality Improvement (CMAQ) Program with additional project eligibilities (BIL § 11115). The primary goal of the CMAQ program is to provide funding to State and local governments to support transportation projects and programs that reduce emissions of criteria pollutants and to help improve air quality for areas that are nonattainment or maintenance for the National Ambient Air Quality Standards (NAAQS) for ozone, carbon monoxide, or particulate matter (both PM_{10} and $PM_{2.5}$) (23 U.S.C. 149). Many CMAQ projects also provide the co-benefits of reducing congestion or greenhouse gas emissions.

B. Guidance on Strategic Priorities and Use of the Federal-Aid Highway Formula Funding

1. **Overview:** This document provides background and guidance to clarify eligibility requirements for the CMAQ Program.

2. **Safety:**
   Prioritizing Safety in All Investments and Projects
   The National Roadway Safety Strategy (NRSS) (issued January 27, 2022) commits the United States Department of Transportation (DOT) and FHWA to respond to the current crisis in traffic fatalities by "taking substantial, comprehensive action to significantly reduce serious and fatal injuries on the Nation's roadways," in pursuit of the goal of achieving zero highway deaths. The FHWA recognizes that zero is the only acceptable number of deaths on our roads and achieving that is our safety goal. The FHWA, therefore, encourages States and other funding recipients to prioritize safety in all Federal highway investments and in all appropriate projects, using relevant Federal-aid funding, including funds from CMAQ.

   The Safe System approach addresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes. It involves a paradigm shift to improve safety culture, increase collaboration across all safety stakeholders, and refocus transportation system design and operation on anticipating human mistakes and lessening impact forces to reduce crash severity and save lives. To achieve the vision of zero fatalities, safety should be fully reflected in a State's transportation investment decisions, from planning and programming, environmental analysis, project design, and construction, to maintenance and operations. States should use data-driven safety analyses to ensure that safety is a key input in any decision made in the project development process and fully consider the safety of all road users in project development.

   The FHWA encourages State and local agencies to consider CMAQ eligible projects that also address roadway safety and implement the Safe System approach wherever possible. Improvements to safety features, including traffic signs, pavement

markings, and multimodal accommodations that are routinely provided as part of a broader Federal-aid highway project can and should be funded from the same source as the broader project, as long as the use is eligible under that funding source.

Because of the role of speed in fatal crashes, FHWA is also providing new resources on the setting of speed limits and on re-engineering roadways to help "self-enforce" speed limits. To achieve the vision of zero fatalities on the Nation's roads, FHWA encourages States to assess safety outcomes for all project types and promote and improve safety for all road users, particularly vulnerable users. The FHWA recommends that streets be designed and operated to maximize the existing right-of-way for accommodation of nonmotorized modes and transit options that increase safety and connectivity. Pedestrian facilities in the public right-of-way must comply with the Americans with Disabilities Act. *See* 42 U.S.C. 12132.

Complete Streets
As one approach to ensuring the safety of all roadway users, FHWA encourages States and communities to adopt and implement Complete Streets policies that prioritize the safety of all users in transportation network planning, design, construction and operations. Section 11206 of the BIL defines Complete Streets standards or policies as those which "ensure the safe and adequate accommodation of all users of the transportation system, including pedestrians, bicyclists, public transportation users, children, older individuals, individuals with disabilities, motorists, and freight vehicles." A complete street includes, but is not limited to, sidewalks, bike lanes (or wide paved shoulders), special bus lanes, accessible public transportation stops, safe and accommodating crossing options, median islands, pedestrian signals, curb extensions, narrower travel lanes, and roundabouts. A Complete Street is safe, and feels safe, for everyone using the street.

3. **Transit Flex:** The FHWA, working with the Federal Transit Administration (FTA), seeks to help Federal-aid recipients plan, develop, and implement infrastructure investments that prioritize safety, mobility, and accessibility for all transportation network users, including pedestrians, bicyclists, transit riders, micromobility users, freight and delivery services providers, and motorists. This includes the incorporation of data sharing principles and data management. Funds from CMAQ can be "flexed" to FTA to fund transit projects. For Title 23 funds that are flexed to FTA, section 104(f) of Title 23, U.S.C., allows funds made available for transit projects or transportation planning to be transferred to FTA and administered in accordance with chapter 53 of Title 49, U.S.C., except that the Federal share requirements of the original fund category continue to apply (See 23 U.S.C. 104(f)(1)).

   The use of Federal-aid funding on transit and transit-related projects can provide an equitable and safe transportation network for travelers of all ages and abilities, including those from marginalized communities facing historic disinvestment. The FHWA encourages recipients to consider using flexible funding for transit projects and associated transit improvements that: (1) increase public transportation access and investment in underserved communities; (2) plan for the safety of all road users by promoting Complete Streets and implementing projects that create safe, connected, and equitable "street" networks; (3) reduce single-occupancy vehicle travel and

associated air pollution in communities near high-volume corridors; (4) consider public transportation fare subsidies as appropriate; (5) target demand-response service towards communities to better meet the mobility needs of older adults, persons with a disability, and those with poor access to essential services; and (6) use equitable and sustainable practices to encourage transit-oriented development.

4. **Transferability Between FHWA Programs:** Section 126 of Title 23, U.S.C., provides that a State may transfer up to 50 percent of the amount apportioned for the fiscal year for certain highway programs, including CMAQ, to other eligible apportioned highway programs. *See also* FHWA Order 4551.1, "Fund Transfers to Other Agencies and Among Title 23 Programs", (Fund Transfers to Other Agencies and Among Title 23 Programs). Historically States have used this flexibility to address unmet needs in areas where apportioned funding was insufficient.

   The BIL made historic investments in highway programs including more than $300 billion in Contract Authority from the Highway Trust Fund. This represents an average annual increase of 29 percent in Federal-aid funding over the amount of Contract Authority for FHWA programs compared to Fiscal Year 2021. Congress also established more than a dozen new highway programs to help address urgent surface transportation needs.

   States have the flexibility to transfer funds out of CMAQ to other apportioned programs, but we encourage States to first consider the need to transfer in light of the significant increase in apportioned funding and the considerable funding for new programs. States, working with FHWA, should determine the need for CMAQ funds – including the ability to apply CMAQ funds to eligible assets owned by local governments, counties, and Tribes – and identify and prioritize projects that maximize the CMAQ funding before deciding to transfer funds out of the CMAQ.

5. **ADA:** The Americans with Disabilities Act (ADA) of 1990 and Section 504 of the Rehabilitation Act of 1973 prohibit discrimination against people with disabilities and ensure equal opportunity and access for persons with disabilities. The Department of Transportation's Section 504 regulations apply to recipients of the Department's financial assistance (*See* 49 CFR 27.3(a)). Title II of the ADA applies to public entities regardless of whether they receive Federal financial assistance (*See* 28 CFR 35.102(a)). The ADA requires that no qualified individual with a disability shall because a public entity's facilities are inaccessible to or unusable by individuals with disabilities, be excluded from participation in, or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any public entity (*See* 28 CFR 35.149). A public entity's pedestrian facilities are considered a "service, program, or activity" of the public entity. As a result, public entities and recipients of Federal financial assistance are required to ensure the accessibility of pedestrian facilities in the public right-of-way, such as curb ramps, sidewalks, crosswalks, pedestrian signals, and transit stops in accordance with applicable regulations.

   If the project reduces transportation emissions and is located in a nonattainment or maintenance area, funds from CMAQ are available to improve accessibility and to

implement recipients' ADA transition plans and upgrade their facilities to eliminate physical obstacles and provide for accessibility for individuals with disabilities. The FHWA will provide oversight to recipients of CMAQ funds to ensure that each public agency's project planning, design, and construction programs comply with ADA and Section 504 accessibility requirements.

6. **Equity:** The BIL provides considerable resources to help States and other funding recipients advance projects that consider the unique circumstances affecting community members' mobility needs and allocate resources consistently with those needs, enabling the transportation network to effectively serve all community members. The FHWA will work with States to ensure consideration of using CMAQ funds for projects and inclusion of project elements that proactively address racial equity, workforce development, economic development, and remove barriers to opportunity, including automobile dependence in both rural and urban communities as a barrier to opportunity or to redress prior inequities and barriers to opportunity.

   Federal-aid recipients, including recipients of CMAQ funds, are responsible for involving the public, including traditionally underserved and underrepresented populations in transportation planning and complying with participation and consultation requirements in 23 CFR 450.210 and 23 CFR 450.316, as applicable. "Underserved populations" include minority and low-income populations but may also include many other demographic categories that face challenges engaging with the transportation process and receiving equitable benefits (*See* FHWA's Environmental Justice Reference Guide for additional information). In addition, CMAQ projects can support the Justice40 Initiative, which establishes a goal that at least 40 percent of the benefits of Federal investments in climate and clean energy infrastructure are distributed to disadvantaged communities. (*See* OMB's Interim Implementation Guidance for the Justice40 Initiative or its successor for additional information).

   To assist with these public engagement efforts, FHWA expects recipients of CMAQ funds to engage with all impacted communities and community leaders to determine which forms of communication are most effective. Recipients should gain insight on the unique circumstances impacting various disadvantaged and underrepresented groups so that new channels for communication may be developed, and the recipients should use this information to inform decisions across all aspects of project delivery including planning, project selection, and the design process.

   Among other things, recipients of CMAQ funds are also required to ensure equitable treatment of workers and trainees on highway projects through compliance with Equal Employment Opportunity requirements under 23 CFR Part 230, Subpart A, as well as ensuring nondiscrimination in all their operations on the basis of race, color, or national origin under Title VI of the Civil Rights Act of 1964. Recipients of CMAQ funds should ensure that they have the capacity and expertise to address Federal civil rights protections that accompany CMAQ funds.

7. **Climate Change and Sustainability:** The United States is committed to a whole-of-government approach to reducing economy-wide net greenhouse gas pollution by 2030. The BIL provides considerable resources—including new programs and

funding—to help States and other funding recipients advance this goal in the transportation sector. In addition, the BIL makes historic investments to improve the resilience of transportation infrastructure, helping States and communities prepare for hazards such as wildfires, floods, storms, and droughts exacerbated by climate change.

The FHWA encourages the advancement of eligible projects that address climate change and sustainability. To enable this, FHWA encourages recipients to consider climate change and sustainability throughout the planning and project development process, including the extent to which projects under CMAQ align with the President's greenhouse gas reduction, climate resilience, and environmental justice commitments. The FHWA encourages recipients to consider the co-benefits of CMAQ funding, such as the reduction of GHG emissions and the ability to contribute to carbon reduction plans, when deciding how to use the funding. The FHWA encourages recipients to fund eligible projects that support fiscally responsible land use and transportation efficient design or incorporate electrification or zero emission vehicle infrastructure. In addition, FHWA encourages recipients to consider projects under CMAQ that support climate change resilience, including consideration of the risks associated with wildfires, drought, extreme heat, and flooding, in line with guidance for projects in floodplains. The FHWA also encourages recipients to consider projects under CMAQ that address environmental justice concerns.

8. **Labor and Workforce**: Highway programs, including CMAQ, may provide opportunities to support the creation of good-paying jobs, including jobs with the free and fair choice to join a union, and the incorporation of strong labor standards, such as the use of project labor agreements; employer neutrality with respect to union organizing; the use of an appropriately trained workforce (in particular registered apprenticeships and other joint labor-management training programs); and the use of an appropriately credentialed workforce in project planning stages and program delivery.

   Recipients should work with FHWA, to the extent possible, to identify opportunities for Federal-aid highway investments to advance high-quality job creation through the use of local or other geographic or economic hire provisions authorized under section 25019 in the BIL, and Indian employment preference for projects that are located on or near Tribal reservations authorized under 23 U.S.C. 140(d), or other workforce strategies targeted at expanding workforce training opportunities for people to get the skills they need to compete for these jobs, especially underrepresented populations: women, people of color, and groups with other systemic barriers to employment (people with disabilities, formerly incarcerated, etc.)

9. **Truck Parking:** Truck parking shortages are a national concern affecting the efficiency of U.S. supply chains and safety for truck drivers and other roadway users. Jason's Law, which was passed in 2012, established a national priority on addressing the shortage of long-term parking for commercial motor vehicles on the National Highway System (NHS).

   Many Federal-aid highway funding programs have eligibility for truck parking projects, including the CMAQ program. While CMAQ funding is not eligible for the construction of commercial motor vehicle parking, CMAQ funds may be obligated

for a project on an eligible facility that reduces transportation emissions. Advanced truck stop electrification systems may be eligible under 23 U.S.C. 149(b)(4) or as a strategy to control extended idling of vehicles under 23 U.S.C. 149(b)(1)(A). The FHWA anticipates that such projects may support progress toward the achievement of national performance goals for improving infrastructure condition, safety, congestion reduction, system reliability, or freight movement on the NHS. Advanced truck stop electrification systems are eligible under 23 U.S.C. 175(c)(1)(A) and projects that reduce transportation emissions at port facilities are eligible under 23 U.S.C. 175(c)(1)(M).

States should consider working with private sector truck stop operators and the trucking community in the siting and development of specific truck parking projects. States also are encouraged to offer opportunities for input from commercial motor vehicle drivers and truck stop operators through their State Freight Advisory Committees established under 49 U.S.C. 70201.

C. Purpose of this Guidance

This CMAQ Program Guidance replaces the November 12, 2013 CMAQ Interim Program Guidance Under MAP-21 and the July 2014 Revised Interim Guidance on CMAQ Operating Assistance under MAP-21.

This guidance provides information on the CMAQ program, including:

- Authorization levels and apportionment,
- Flexibility and transferability provisions available to States,
- Project eligibility,
- Project selection processes,
- Program administration,
- Annual reporting, and
- Performance management.

II. GOVERNING AUTHORITIES

A. Section 11101(a)(1) of the BIL authorizes funds for the CMAQ program.
B. Section 11104(b)(5) of the BIL provides for apportionment of CMAQ funds under 23 U.S.C. 104.
C. Section 11115 of the BIL amends 23 U.S.C. 149.

III. FUNDING AND FINANCING CMAQ PROJECTS AND PROGRAMS

A. Authorization

With a few exceptions, BIL (BIL § 11115; 23 U.S.C. 149) continues all funding features that applied to CMAQ under the Fixing America's Surface Transportation (FAST) Act (Pub. L. 114-94). The Contract Authority ($13.2 billion for 5 years) is from the Highway Account of the Highway Trust Fund, subject to the overall Federal-aid obligation limitation.

	Bipartisan Infrastructure Law (BIL)				
Fiscal Year (FY)	2022	2023	2024	2025	2026
Contract Authority	$2.536 B*	$2.587 B*	$2.639 B*	$2.692 B*	$2.746 B*

*Calculated (sum of estimated individual State CMAQ apportionments)

B. Apportionment

1. CMAQ State Apportionment

The BIL directs DOT/FHWA to apportion funding as a lump sum for each State and then divide that total among apportioned programs. Each State's CMAQ apportionment is calculated based on a ratio specified in law [23 U.S.C. 104(b)(4)(C)]. From each State's total base apportionment determined under section 104(c)(1) of Title 23, U.S.C., an amount is apportioned for the CMAQ Program. Pursuant to 23 U.S.C. 104(b)(4), for each fiscal year, the amount of CMAQ funds apportioned to each State is calculated by multiplying the total CMAQ funds apportioned for that fiscal year under 23 U.S.C. 104(b)(4)(B), by the ratio of each State's FY 2020 apportionment for the CMAQ Program to the total FY 2020 CMAQ Program apportionments for all States.

2. Priority Set-aside for $PM_{2.5}$ Areas

The BIL continues to set aside a portion of CMAQ funds for priority use in $PM_{2.5}$ areas (23 U.S.C. 149(k)). Any State that has a $PM_{2.5}$ nonattainment or maintenance area, with the exception of those that are specifically exempt (see below), is required to invest a portion of its CMAQ funding in projects that reduce $PM_{2.5}$ emissions. This can be done by reducing direct $PM_{2.5}$ emissions or emissions of its precursors, such as nitrogen oxides (NOx) and volatile organic compounds (VOCs). More specifically, an amount equal to 25 percent of the funds apportioned based upon the weighted population within the $PM_{2.5}$ nonattainment areas in each of the affected States must be used for projects that reduce $PM_{2.5}$ emissions in those nonattainment and maintenance areas.

The $PM_{2.5}$ emissions reduction projects include diesel replacements or retrofits for nonroad diesel equipment or on-road diesel equipment that is operated on a highway construction project, [23 U.S.C. 149(k)(1) and (2)] and the most cost-effective projects that reduce emissions from port-related landside nonroad or on-road equipment [23 U.S.C. 149(k)(4)]. To the extent practicable, projects must be selected that prioritize benefits to disadvantaged communities or low-income populations living in, or immediately adjacent to the area [23 U.S.C. 149(k)(1)(B)].

Section 149(k)(3) of Title 23 U.S.C. exempts certain $PM_{2.5}$ nonattainment and maintenance areas from the PM2.5 set-aside requirements. The exemption has three requirements. First, the area must be located within a State that has a population density of 80 or fewer persons per square mile of land area under the most recently available decennial census data. Second, the area's projects must not be included in the regional emissions analysis for a Metropolitan Transportation Plan or

Transportation Improvement Program (TIP) (i.e., the area must be an isolated rural area). Third, the area must have regional motor vehicle emissions that are an insignificant contributor to the air quality problem for $PM_{2.5}$.in the nonattainment or maintenance area.

3. State Flexibility: Mandatory vs Flexible CMAQ Funding

The CMAQ funding supports eligible projects and programs in nonattainment and maintenance areas. Based on the apportionment process, most States must use all of their CMAQ funds in this way (e.g., *mandatory* funding). However, all States receive a minimum amount of funding (e.g., "minimum apportionment") regardless of the nonattainment and maintenance area status. States that received the minimum apportionment in FY 2009 under 23 U.S.C. 104(c)(1)(B) as in effect on the day before enactment of MAP-21 and have designated nonattainment or maintenance areas for ozone or CO, will be able to use a portion of their CMAQ funding for any project eligible under either the CMAQ program or the Surface Transportation Block Grant Program (STBG) at 23 U.S.C. 133. The initial *flexible* portion is determined by multiplying the ratio described in 23 U.S.C. 149(d)(2)(B) by the CMAQ amount apportioned to the State under 23 U.S.C. 104(b)(4) after deduction of the $PM_{2.5}$ and the State Planning and Research set-asides. This ratio is, essentially, the amount of FY 2009 CMAQ funding each State was permitted to spend on STBG-eligible projects relative to the total amount of FY 2009 CMAQ funding apportioned for that State under 23 U.S.C. 104(b)(2), as in effect on September 30, 2012. The initial flexible portion is then further adjusted to account for changes in designations (23 U.S.C. 149(d)(3)[1]. States that have no ozone, CO or $PM_{2.5}$ nonattainment or maintenance areas will be able to use all of their CMAQ funds for either CMAQ- or STBG-eligible projects [23 U.S.C. 149((d)(1)]. Any State that has $PM_{2.5}$ set-aside funds must use those funds on CMAQ-eligible projects that reduce $PM_{2.5}$ directly or its precursors in $PM_{2.5}$ nonattainment and maintenance areas [23 U.S.C. 149(k)].

A State with flexible funds can use those funds anywhere in the State for projects eligible for either CMAQ or STBG [23 U.S.C. 149(d)]. The FHWA reports the breakdown of mandatory and flexible funds by State in its fiscal year supplementary tables notice as well as a $PM_{2.5}$ set-aside column (since FY 2013) to show the amount of $PM_{2.5}$ set-aside each State receives.

While State apportionments have been set using the FY 2009 levels as a base, the $PM_{2.5}$ set-aside portion and the State flexibility considerations must be addressed through an assessment of all relevant criteria pollutants in each State. However, with the exception of the $PM_{2.5}$ values, these weights will be used to address the State flexibility covering former minimum apportionment areas, since 23 U.S.C. 149(d)(3) requires the FHWA to factor in any changes in nonattainment and maintenance area designation since FY 2009. Consequently, the FY 2009 weighted nonattainment and maintenance area populations will continue to be updated to reflect changes in these designations. Unlike past apportionments, however, the update of the FY 2009 basis for the purposes of State flexibility in minimum apportionment will not include

[1] Section 1103(d) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (Pub. L. 109-59, Aug. 10, 2005).

revised population – only the changes in nonattainment and maintenance designations for the pollutants that applied in FY 2009.

4. Lock and Dam and Marine Highways Limitation

For each fiscal year, a State may not obligate more than 10 percent of the CMAQ funds apportioned to the State under 23 U.S.C. 104(b) for lock and dam or marine highway projects, as described in 23 U.S.C. 149(b)(10) and (11). *See* 23 U.S.C. 149(c)(4).

C. Federal Share

The Federal share is governed by 23 U.S.C. 120. The Federal share for most CMAQ projects, generally, has been 80 percent. However, there are some exceptions:

The Federal share for projects on the Interstate System is generally 90 percent. An upward sliding scale adjustment is available to States based on public lands area (Sliding Scale Rates In Public Land States). States may use a lower Federal share on Federal-aid projects as provided in 23 U.S.C. 120 [23 U.S.C. 120(h)].

States can program a full 100 percent Federal share for certain project types listed under 23 U.S.C. 120(c)(1). This section sets a priority for certain safety projects, although there are several types of projects listed that also provide the potential for emissions reduction such as:

- Traffic control signalization,
- Traffic circles (also known as "roundabouts"),
- Commuter carpooling and vanpooling,
- Installation of certain traffic signs, traffic lights,
- Priority control systems for emergency vehicles or transit vehicles at signalized intersections, and
- Vehicle-to-infrastructure communication equipment.

The FHWA publishes A Guide to Federal-aid Programs and Projects, which outlines financial-related information such as Federal share, program codes, period of availability, and other factors surrounding the financial elements of project implementation. Additional guidance on matching requirements for FHWA funded grants and subgrants can be found in Non-Federal Matching Requirements and in the FHWA Memorandum, "ACTION: Federal-Aid Guidance Non-Federal Matching Requirements" (May 15, 2019). The latter notes that toll credits are an eligible source of matching State/local funds for CMAQ projects.

D. CMAQ Fund Transfers

1. Transfer of Funds to FTA

The CMAQ funds that are being obligated for transit projects can be transferred to FTA and administered under chapter 53 of title 49, U.S.C. Funds transferred to FTA remain subject to the Federal share that applied to the category from which the

funding was derived [23 U.S.C. 104(f)]. See FHWA Order 4551.1, "Fund Transfers to Other Agencies and Among Title 23 Programs".

2. Transfers between Apportioned Programs

A State may transfer up to 50 percent of CMAQ funds made available each fiscal year to the National Highway Performance Program, National Highway Freight Program, Surface Transportation Block Grant Program, Highway Safety Improvement Program, Carbon Reduction Program, and Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) Formula Program [23 U.S.C. 126]. The CMAQ funds transferred to another program become program funds subject to the applicable program into which the funds are being transferred.

Since transportation and environmental program priorities fluctuate, States have been able to transfer a limited amount of their CMAQ apportionment to other programs. The standard provisions of 23 U.S.C. 126 apply (i.e., up to 50 percent of apportioned program funds can be transferred each year from program funds eligible for transfer). **For CMAQ, the apportioned funds eligible for transfer cannot come from the statutory $PM_{2.5}$ set- aside [23 U.S.C 149 (d)(2)(A)(i)] (See Section III.B.2)**. This limitation gives meaning to both the statutory transfer language in Section 126 and to the $PM_{2.5}$ priority established by Congress in 23 U.S.C. 149(k). This safeguarding of $PM_{2.5}$ set-aside funds from transfer does not affect the ability of a State to transfer up to 50 percent of its CMAQ funds to another apportioned program.

The FHWA Order 4551.1, "Fund Transfers to Other Agencies and Among Title 23 Programs" covers these and other transfer provisions encompassing the full Federal-aid highway program, including guidance on program-specific transfer requirements, limitations, process and logistics, and other factors associated with Federal-aid transfers.

E. Public-Private Partnerships

A Metropolitan Planning Organization (MPO), State DOT, or other project sponsor may enter into an agreement with any public, private, or nonprofit entity to cooperatively implement any CMAQ project through a public private agreement or partnership [23 U.S.C. 149(f)]. In a public private partnership (PPP), a private or non-profit entity's resources replace or supplement State or local funds and possibly a portion of the Federal aid in a selected project.

Partnerships should have a legally binding, written agreement in place between the public agency and the private or non-profit entity before a CMAQ-funded project may be implemented. These agreements should be developed under relevant Federal and State law and should specify the intended use for CMAQ funding; the roles and responsibilities of the participating entities; and how the disposition of land, facilities, and equipment will be carried out should the original terms of the agreement be altered (e.g., due to insolvency, change in ownership, or other changes in the structure of the PPP).

The CMAQ funds should be used for PPPs that benefit the public by supporting projects that reduce emissions. Consistent with the planning and project selection provisions of the Federal-aid highway program, FHWA considers it essential that all interested parties have full, open, and timely access to the project selection process.

There are several other statutory restrictions and special provisions on the use of CMAQ funds in PPPs. Eligible costs under the Partnerships with Nongovernmental Entities provision (23 U.S.C. 149(f)) must not include costs to fund an obligation imposed on private sector or non-profit entities under the CAA or any other Federal law [23 U.S.C. 149(f)(5)].

Participation by entities under the partnership provisions may consist of the following [23 U.S.C. 149(f)(2)]:

- Ownership or operation of any land, facility, vehicle, or other physical assets.
- Cost sharing of any project expense.
- Administration, construction or project management, operation, or any other management or operational duty associated with the project.
- Other forms of participation approved by the Secretary.

Sharing of total project costs, both capital and operating, is a critical element of a successful public-private venture, particularly if the private entity is expected to realize profits as part of the joint venture. State and local officials are urged to consider a full range of cost-sharing options when developing a PPP, including a larger State or local match.

If potential partners are interested in pursuing a PPP, FHWA's Center for Innovative Finance Support can help provide technical assistance and expertise in coordinating between Federal agencies and State, local, and private sponsors.

IV. CMAQ PROGRAM ADMINISTRATION

A. Federal Agency Responsibilities and Coordination

The FHWA has oversight responsibility for administering the CMAQ program. In determining project eligibility, FHWA Division offices should establish and maintain a consultation and coordination process to review CMAQ funding proposals and to consult with FTA and Environmental Protection Agency (EPA) regional offices when necessary. While the eligibility determination is not made jointly, efforts should be made to satisfy the concerns raised by the agencies' field offices. The FHWA (or FTA) field offices may request additional information from the State, MPO or transit agency to help determine eligibility. The consultation process should provide for timely review and handling of CMAQ eligibility determinations and funding proposals. The FHWA and FTA Headquarters offices are available to consult with their field offices on eligibility determinations.

When CMAQ funds are transferred from FHWA to FTA to support transit projects, FTA will administer those CMAQ-funded transit projects. In cases where FTA lacks statutory authority (e.g., school bus fleets), FHWA will administer those for purposes of the

CMAQ program. For projects that involve transit and non-transit elements, such as park-and-ride lots and intermodal passenger projects, FHWA and FTA will determine the administering agency on a case-by-case basis. FHWA will administer all other projects. See FHWA Order 4551.1 for more information.

B. Project Selection

Under 23 U.S.C. 145, States determine which eligible projects shall be federally financed. Consequently, all projects funded from the Federal-aid highway apportionments, including those supported with CMAQ funds, are selected by the State or the State in conjunction with the MPO.

Proposals for CMAQ funding should include an accurate description of the project, providing information on its size, scope, location, and timetable. Also, an assessment of the project's expected emission reduction benefits should be completed prior to project selection to better inform the selection of CMAQ projects. States and MPOs may also consider the anticipated co-benefits (safety, equity, greenhouse gas emissions reductions, etc.) of CMAQ-eligible projects as part of their project selection matrix, such as support of the State's Carbon Reduction Strategy under 23 USC 175(d).

The programming and funding of CMAQ projects must meet the planning requirements of 23 U.S.C. 134 and 135 [23 U.S.C. 149(e)]. MPOs, State DOTs, and transit agencies should develop CMAQ project selection processes that address the effectiveness of projects in reducing motor vehicle emissions and congestion. Such processes can help to ensure projects are programmed early through the transportation planning process.

State DOTs are encouraged to consult with MPOs and air quality agencies to determine regional and local CMAQ priorities and work with them to allocate funds accordingly. Specifically, 23 U.S.C. 149(h) encourages States and MPOs to consult with State and local air quality agencies in nonattainment and maintenance areas on the estimated emission reductions from proposed CMAQ programs and projects. This process should provide an opportunity for States or local agencies to select eligible projects that will best use CMAQ funding to meet the requirements and advance the goals of the CAA. An overview of the project selection and funding process of a CMAQ project is available on the CMAQ Website.

The CMAQ project selection process should be transparent, in writing, and publicly available. The process should identify the agencies involved in evaluating proposed projects, clarify how projects are selected, and name the committee or group responsible for making the final recommendation to the MPO board or other approving body. The process should also identify the basis for evaluating projects, including emissions benefits, cost-effectiveness, and any other ancillary selection factors such as congestion relief, greenhouse gas reductions, safety, system preservation, equitable access to opportunity, sustainable development, freight, reduced Single Occupancy Vehicle (SOV) reliance, multimodal benefits, and others.

The FHWA encourages the State and MPO to coordinate to help ensure that CMAQ funds are used appropriately to maximize their effectiveness in improving air quality and in meeting the program's requirements. The State or MPO should consult with FHWA

and FTA to resolve any questions about eligibility to ensure that the projects programmed for CMAQ funding in the TIP are all eligible.

1. Prioritization in the Selection Process

Section 149 of Title 23, U.S.C. provides a variety of considerations for States to contemplate when selecting projects for CMAQ funding which are covered in this section. The FHWA and FTA encourage State DOTs, MPOs and other project sponsors to support the goals established in the BIL. The FHWA and FTA encourage State DOTs and MPOs to give priority to select projects with greater emission reductions as compared to competing projects.

a. $PM_{2.5}$ Reducing Projects

State DOTs and MPOs shall give priority in areas designated as nonattainment or maintenance for $PM_{2.5}$ under the Clean Air Act (42 U.S.C. 7401 et seq.) in distributing funds received for CMAQ projects and programs from apportionments under 23 U.S.C. 104(b)(4) to projects that are proven to reduce $PM_{2.5}$, including diesel replacements or retrofits [23 U.S.C. 149(g)(3)]. This priority consideration applies to all CMAQ funds, not just the portion set aside for priority use in $PM_{2.5}$ areas [23 U.S.C. 149(k)(1)] [see III.B.2.].

b. Cost Effectiveness

When selecting projects for CMAQ funds, State DOTs should reflect the positive cost-effectiveness relationships highlighted in FHWA's Cost-Effectiveness Tables. State and local transportation programs that implement a broad array of these cost-effective measures may record a more rapid rate of progress toward their clean air goals, since many of these projects and programs generate emissions reduction benefits. Local procedures that elevate the importance of these efforts in project selection and rate them accordingly may accelerate the drive to the attainment or maintenance of national ambient air quality standards in the designated nonattainment or maintenance area.

Section 149 of Title 23, U.S.C. directs States and MPOs to consider cost-effectiveness in selecting projects [23 U.S.C. 149(i)(2)(C)]. It calls on DOT, in consultation with EPA, to develop tables or other similar medium that illustrate the cost-effectiveness of a range of eligible project types. These tables are intended to inform States, MPOs, and other project sponsors on the air quality benefits derived from a variety of project types compared to the investment required. These tables will be a resource for State and local planners as they consider CMAQ investments, and the emissions reduction needs in the areas covering their programs.

c. Transportation Control Measures

Section 176(c) of the CAA [42 U.S.C. 7506(c)] requires that the FHWA and FTA ensure timely implementation of transportation control measures (TCMs) in applicable State Implementation Plans (SIP). These TCMs and other CMAQ-

eligible projects identified in approved SIPs should receive funding priority. It is important to note that one of the TCMs, "program to encourage the voluntary removal from use and the marketplace of pre-1980 model year light duty vehicles and pre-1980 model light duty trucks", is not eligible for CMAQ funds [23 U.S.C. 149(b)(1)(A)(i)]. Appendix A lists the TCMs that are eligible for CMAQ funds.

C. Evaluation and Assessment of Projects

1. Database and Annual Reports

The development and maintenance of a cumulative database of all CMAQ projects is required by 23 U.S.C. 149(i)(1). This database must include specific information about each project such as name, location, sponsor, cost, and to the extent already measured by the project sponsor, cost-effectiveness based on reductions in emissions and congestion. The database must be readily available for public review either by publication or in electronically accessible format and means. States provide annual reports on all CMAQ obligations and deobligations taking place in each fiscal year. These reports include obligations of program funds; descriptions of individual projects; and potential impacts on air quality and congestion. The data provided in the annual reports and the CMAQ Public Access System allows for transparency, showing that the program continues to provide incremental benefits through enhanced regional and local air quality improvement, and through contributions to congestion relief.

In order to populate the database, FHWA division offices, State DOTs, and MPOs develop a process for entering and approving project data in a timely manner. State DOTs submit the annual report by March 1 and FHWA approves it by July 1 following the end of the previous Federal fiscal year (September 30). The annual report covers all CMAQ obligations for that previous fiscal year. Thus, State DOTs and MPOs report the data early enough that FHWA has time to review and comment on the report. Information related to the CMAQ Project Tracking System, the Public Access System, and its use is available on the CMAQ Website.

Information provided in the CMAQ project reporting system is useful for FHWA and FTA planning purposes, as well as reports to the U.S. Congress. The database is also the official data source for reporting on CMAQ emission measure performance under the transportation performance management requirements in 23 CFR part 490 (See Section VI for more information on CMAQ performance management).

2. Financial Management

The FHWA's Chief Financial Officer has established accounting codes in the Fiscal Management Information System (FMIS) to track State investments of CMAQ funds in the mandatory and flexible spending areas, and the set-aside spending for $PM_{2.5}$ priority. States and other sponsors should accurately reflect these CMAQ obligations as they record project data in the FMIS or provide information that ultimately populates the system.

3. Cost Effectiveness Table Development and Update

In accordance with 23 U.S.C. 149(i)(2), FHWA has developed a set of CMAQ cost-effectiveness tables that show measures of cost-effectiveness (dollars per ton of emissions reduced), on a variety of CMAQ eligible projects. The FHWA issued the first set of cost-effectiveness tables in 2005. The updated 2020 CMAQ Cost-Effectiveness Tables includes a revision to the list of project types to reflect information from the CMAQ Public Access System (PAS), and updated emissions modeling using the EPA's "MOtor Vehicle Emissions Simulator (MOVES)" software. Section 149(i)(2)(C) of title 23, U.S.C., requires States and MPOs to consider cost-effectiveness information in these tables when selecting projects for CMAQ funding.

V. PROJECT ELIGIBILITY

A. General Project Eligibility Criteria

Each CMAQ project must meet three basic criteria: it must be a transportation project; it must be located in or benefit a nonattainment or maintenance area; and it must generate an emissions reduction. *See* 23 U.S.C. 149(b).

1. Transportation Project

As a Title 23 Federal-aid funding program, projects funded with CMAQ funds must be a "transportation project." That is, the project must be one that is eligible for assistance under Title 23 [23 U.S.C. 101(a)(20)]. Many activities may meet other general eligibility criteria, such as being located in a nonattainment area and reducing emissions, but are not a transportation project by definition and therefore would not be eligible for CMAQ funding. For example, installation of smokestack scrubbers, reducing VOC leaks at natural gas wells, and solvent containment at dry cleaners are not transportation projects and therefore are not eligible CMAQ projects.

2. Geographic – Nonattainment/Maintenance Status

The CMAQ funds may be invested in all ozone, CO, and PM nonattainment and maintenance areas, including former areas where the NAAQS has been revoked or the maintenance period has been satisfied. Funds also may be used for projects in proximity to nonattainment and maintenance areas if the benefits will be realized primarily within the nonattainment or maintenance area. The delineation of an area considered "in proximity" should be discussed with the FHWA and FTA field offices and, if necessary, elevated to FHWA and FTA Headquarters. The FHWA issued a Federal Register notice discussing this policy in 2002.

The CMAQ funds may also be invested in maintenance areas that have approved maintenance plans under CAA Section 175A (42 U.S.C. 7505a) and 23 U.S.C. 149(b)). This includes unclassified CO maintenance areas. In States with ozone, PM, or CO maintenance areas but no nonattainment areas, mandatory CMAQ funds must be used in the maintenance areas.

3. Air Quality Beneficial

Air quality improvement is defined by several distinct terms in 23 U.S.C. 149. These terms include contribution to attainment, reduction in pollution, air quality benefits, and others. For purposes of this guidance, emission reduction represents this group of terms. The CMAQ-funded projects or programs must contribute to the attainment or maintenance of the NAAQS and be effective at reducing CO, ozone precursors (NOx and VOC), $PM_{2.5}$, PM_{10}, or PM precursor emissions from transportation (e.g., NOx). [23 U.S.C. 149(b)]. These reductions must contribute to the area's overall clean air strategy and can be demonstrated by the emissions reduction analysis [23 U.S.C. 149(b)] that is described in this guidance. States and MPOs also may consider the co-benefits of eligible projects, including greenhouse gas reductions, congestion relief, mobility, safety, or other elements, when programming CMAQ funds, though such co-benefits do not alone establish eligibility.

The FHWA has developed a CMAQ Emissions Calculator Toolkit which is located on the FHWA CMAQ Website. This collection of spreadsheet-based tools allows users to estimate emission reduction for many CMAQ project types. It is offered as an additional resource to assist DOTs, MPOs and project sponsors in the project justification and reporting process. However, use of the Toolkit is not required. Agencies and individuals using a different methodology that they prefer to generate air quality benefit information are welcome to continue their current practice.

B. Projects Ineligible for CMAQ Funding

The following projects are ineligible for CMAQ funding:

1. Light-duty vehicle scrappage programs are ineligible.
2. Projects that add new capacity for single occupancy vehicles (SOV) are ineligible for CMAQ funding unless construction is limited to high occupancy vehicle (HOV) lanes. [23 U.S.C. 149(b)(1)(A)(i), (b)(5) and (c)(3)]. This HOV lane eligibility includes the full range of HOV facility uses authorized under 23 U.S.C. 166, such as high occupancy toll (HOT) and low- emission vehicles.
3. Routine maintenance and rehabilitation projects (e.g., replacement-in-kind of track or other equipment, reconstruction of bridges, stations, and other facilities, replacing and repairing sidewalks, and repaving or repairing roads) are ineligible for CMAQ funding as they only maintain existing levels of highway and transit service, and therefore do not reduce emissions. Other funding sources, such as STBG and FTA's Urbanized Area Formula Program (49 U.S.C. 5307), are available for such activities.
4. Administrative costs of the CMAQ program, such as support for a State's "CMAQ Project Management Office," are ineligible.
5. Projects that do not meet the specific eligibility requirements of Titles 23 and 49, U.S.C., are ineligible for CMAQ funds.
6. Stand-alone projects to purchase fuel are generally ineligible.[2]
7. Acquisition, operation, or development of models or monitoring networks are ineligible for CMAQ funds. Modeling or monitoring emissions, traffic operations,

[2] Exceptions were included in Section 1808(k) of SAFETEA-LU.

travel demand or other non-project specific planning studies do not directly lead to an emissions reduction, and are therefore not eligible. Such activities may be eligible for other Title 23 funds.

8. Litigation costs surrounding CMAQ or other Federal-aid projects are ineligible.

C. Eligible Programs and Project Types

1. Vehicle/Fuel Technology

a. Alternative Fuel Projects

Program funds may be used to support projects involving the use of alternative fuels or renewable fuels, as defined in the Energy Policy Act of 1992 or the Energy Independence and Security Act of 2007. All standard eligibility criteria apply. Aside from fuel acquisitions that are part of a transit operating support effort, the stand-alone purchase of any fuel--alternative or otherwise--is not an eligible CMAQ cost. However, the few exceptions provided by Section 1808(k) of SAFETEA-LU continue in effect, subject to the operating assistance limitation as described in Section V.D.2.

Alternative Fuel Vehicles

The CMAQ funds may be used for the incremental cost between purchasing alternative fuel vehicles, including electric vehicles, and comparable conventionally fueled vehicles for publicly owned or private non-transit fleets [23 U.S.C. 149(f)(4)(B)]. Such projects shall apply other governmental financial purchase contributions in the calculations of the incremental cost [23 U.S.C. 149(f)(4)(C)]. Projects involving heavier vehicles, including refuse haulers and delivery trucks, also may be appropriate for program support. Eligibility should be based on a comparison of the emissions projections of these larger candidate vehicles and comparable conventionally fueled vehicles.

On-road motor vehicles used in a maintenance role would qualify, but only for the vehicle itself, not the peripheral equipment such as plows and salt or sand spreaders. Costs associated with converting non-transit fleets to run on alternative fuels are also eligible. Such vehicles should be fueled by one of the alternative fuels identified in Section 301 of the 1992 Energy Policy Act or biodiesel.

There are certain types of transit vehicle projects that are not administered by FTA, such as the purchase of electric and alternative fuel public school bus fleets. Since these are considered a transit project for the purposes of the CMAQ program, these vehicle purchases can be fully funded similar to other transit vehicles. The FHWA would administer these projects. See Section V.C.2. (Transit Improvements) for more information about alternative fuel transit projects typically administered by FTA.

The FHWA supports the use of alternative fuels and vehicles. For projects that are subject to the limitations under 2 CFR 225 App. B. Selected Item of Cost, 19a(5), relating to General Government Expenses, CMAQ funds can only be used

for the pro-rata share that benefits air quality. Police and fire equipment are called out as explicit examples in this provision. Options to determine the pro-rata share that benefits air quality include using the incremental cost difference between conventional and alternative fuel vehicles, the proportion of expected emissions reduction projected from the alternative fuel vehicle use, or other methodology for allocating costs to CMAQ eligible portions of the purchase.

Hybrid Vehicles

Although not defined by the Energy Policy Act of 1992 as alternative fuel vehicles, certain hybrid vehicles that have lower emissions rates than their non-hybrid counterparts may be eligible for CMAQ funds. Hybrid vehicle models that are in part the focus of State legislation addressing HOV exemptions for alternative fuel and low emissions vehicles are considered eligible for CMAQ support. Other hybrid vehicles will be assessed on a case-specific basis, as there is no specific EPA regulation available to rate the lower emissions and energy efficiency advantages of the models involved.

Zero Emission Vehicles

The purchase of medium- or heavy-duty zero emissions vehicles and related charging equipment is eligible for CMAQ funds, under the diesel replacement or retrofit project category [23 U.S.C. 149(b)(8)(C)].

Vehicle Recharging and Refueling Infrastructure

The CMAQ funds can be used to support the costs of vehicle refueling infrastructure, including infrastructure that would support the development, production, and use of emerging technologies that reduce emissions of air pollutants from motor vehicles and nonroad vehicles and nonroad engines used in construction projects or port-related freight operations, and other capital investments associated with the project [23 U.S.C. 149(f)(4)(A)].

Establishing publicly owned fueling or charging facilities and other infrastructure needed to fuel alternative-fuel vehicles is an eligible expense.[3] Fueling facilities can dispense one or more of the alternative fuels identified in Section 301 of the 1992 Energy Policy Act or biodiesel or provide recharging for electric vehicles. Additionally, CMAQ funds may be used for projects to support converting or expanding a private fueling facility to support the use of alternative fuels for private fleets through a public-private partnership agreement.

For any refueling facility, including electric vehicle and natural gas vehicle infrastructure identified in 23 U.S.C. 149(c)(2), CMAQ funds may be used to establish or support refueling facilities within the Interstate ROW, provided these

[3] Projects for the construction of publicly accessible EV chargers under the CMAQ program are subject to the National Electric Vehicle Infrastructure Standards and Requirements under 23 CFR part 680.

services comply with 23 U.S.C. 111, regarding the prohibition of commercial activities in the Interstate ROW.[4]

b. Electric and Natural Gas Vehicles and Infrastructure

A State may obligate funds apportioned for a project or program to establish electric vehicle (EV) charging stations or natural gas vehicle refueling stations for the use of battery-powered or natural gas-fueled trucks or other motor vehicles at any location in the State. Additional priority is given for placement in Alternative Fuel Corridors designated under 23 U.S.C. 151.

Funding for publicly available EV charging infrastructure is also available under the National Electric Vehicle Infrastructure (NEVI) Formula Program. Information about this program can be found in the NEVI Formula Program Guidance. Resources and information related to the deployment of a network of electric vehicle chargers, zero-emission fueling infrastructure, and zero-emission transit and school buses can be obtained on the Joint Office of Energy and Transportation Website. The EV charging infrastructure funded with CMAQ funds must also comply with the regulations at 23 CFR part 680.

The CMAQ Program funds can be used to purchase and install roadway signage to direct motorists to the location of electric vehicle recharging and alternative fuel refueling infrastructure in relation to Alternative Fuel Corridors (AFC) when determined to serve an associated education and outreach function for such corridors.

c. Diesel Engine Replacements or Retrofit/Advanced Truck Technologies

Various types of projects fall under this project type. These efforts are defined as diesel vehicle replacement, repowering (replacing an engine with a cleaner diesel engine, alternative fuels, etc.), rebuilding an engine, and installing after-treatment technologies. Diesel emission reduction technologies must be certified or verified by the EPA or the California Air Resources Board, in consultation with DOT [23 U.S.C. 149(g)(2)]. Table 1 summarized various eligible project types under the diesel engine replacements or replacements/advanced truck technologies category.

Table 1. Diesel Engine Replacements or Retrofits/Advanced Truck Technologies Eligible Project Types

Project Type	Eligibility	Notes
Vehicle and Engine Replacements or Retrofits (23 U.S.C. 149(b)(8)		
Engine replacement	Yes	Project agreements include a provision for verification that the engine is no longer contributing emissions in the nonattainment or maintenance area.
Full vehicle replacement	Yes	
Full engine rebuild/reconditioning	Yes	
Purchase/installation of retrofit hardware	Yes	Including PM traps and oxidization catalysts*

[4]See FHWA's Frequently Asked Questions on Electric Vehicles (EV) Charging.

Project Type	Eligibility	Notes
Heavy-duty vehicle retirement programs	Yes	
On-road motor vehicles or non-road vehicles and equipment that are used in construction projects or port-related freight operations funded by Title 23 or Chapter 53 of Title 49	Yes	This project is limited to those located in PM or ozone nonattainment or maintenance areas.
Maintenance		
Equipment used predominantly in a maintenance role	No	Examples include loaders or backhoes in yard or depot work, tractors assigned to mowing or other median maintenance, impactors or rollers involved in routine work, such as pothole repair, and others.
On-road motor vehicles used in a maintenance role	Yes	Funding is only the vehicle itself, not the periphery equipment such as plows and salt or sand spreaders.
Fuel		
The purchase of fuel as a stand-alone project	No	
The purchase of fuel if it is required to support the installation of emissions control equipment, repowering, rebuilding, or other retrofits of non-road engines.	Yes	
School Buses		
Retrofit or replace diesel school buses	Yes	Administered by FHWA, since FTA lacks statutory authority.
Others		
Transportation projects that are part of an effort associated with EPA's Diesel Emissions Reduction Act (DERA)	Maybe	FHWA field offices, State DOTs, and other local sponsors should consult with the EPA Regional Office.
Upgrading long-haul heavy-duty diesel trucks with EPA and/or California Air Resources Board (CARB) verified advanced technologies	Yes	If involves the private sector should be part of a PPP.
Outreach (23 U.S.C. 149(b)(8)(B)		
Outreach activities that provide information exchange and technical assistance to diesel owners and operators of diesel equipment and vehicles regarding the purchase and installation of diesel replacements or retrofits	Yes	Includes the actual education and outreach program and other efforts to promote the use of retrofit technologies.

* After-treatment and other on-board control devices are restricted to those EPA, or the California Air Resources Board (CARB) have verified and/or technologies as defined in Section 791 of the Energy Policy Act of 2005 (42 U.S.C. 16 131). [23 U.S.C. 149(b)(8)]

Many diesel replacements or retrofit projects involve private sector participation. Although standard match rates established in 23 U.S.C. 120 apply to these efforts,

States and local governments are encouraged to seek a higher non-Federal match from those participants that ultimately will own the equipment.

d. Port-related Freight/Intermodal Operations

Freight projects that reduce emissions fall generally into two categories: primary efforts that target emissions directly or secondary projects that reduce net emissions.

Successful ***primary projects*** include retrofits or replacement of diesel vehicles or engines. 23 U.S.C. 149(b)(8)(A)(ii) specifies that the purchase of diesel retrofits for non-road vehicles and engines that are used in port -related freight operations is eligible for CMAQ funds. Eligible projects may include port electrification activities. This applies to non-road mobile freight projects, such as locomotive engines and marine highway vessels. In addition, CMAQ funds can be used to support vehicle refueling infrastructure in support of the use of alternative fuel vehicles and non-road engines for port-related freight operations [23 U.S.C. 149(f)(4)(A)]. The $PM_{2.5}$ set-aside funds can be used to support port-related equipment and vehicles in $PM_{2.5}$ nonattainment and maintenance areas to reduce emissions from port-related landside nonroad or on-road equipment [23 U.S.C. 149(k)(4)].

Non-road mobile source projects including port-related vehicles and equipment are eligible for CMAQ funding. The CMAQ funds can be used to support locomotive retrofit and the acquisition of clean locomotives, such as railyard switchers and shunters that fit the generator-set (or Genset) criterion. The CMAQ funds have also been used to support the rebuild or replacement of engines on marine highway vessels and ferry boats.

Secondary projects reduce emissions through modifications or additions to infrastructure and the ensuing modal shift. For example, support for an intermodal container transfer facility may be eligible if the project demonstrates reduced diesel engine emissions when balancing the drop in truck VMT against the increase in locomotive or other non-highway activity. Intermodal facilities, such as inland transshipment ports or near/on-dock rail, may generate substantial emissions reductions through the decrease in miles traveled for older, higher-polluting heavy-duty diesel trucks. This secondary, indirect effect on truck traffic and the ensuing drop in diesel emissions help demonstrate eligibility. Projects and programs targeting freight capital costs-rolling stock or ground infrastructure-are eligible if they can demonstrate emissions benefits.

The transportation function of these freight/intermodal projects should be emphasized. Marginal projects that support freight operations in a very indirect manner are not eligible for CMAQ funding. Warehouse handling equipment, for example, is not an eligible investment of program funds. Warehouses or other similar structures, such as transit sheds, bulk silos or other permanent, non-mobile facilities that function more as storage resources are not eligible. However, equipment that provides a transportation function or directly supports this function is eligible, such as railyard switch locomotives or shunters that fall into

the generator-set or other clean engine category. Similarly, land-side port equipment (such as large-scale container gantry cranes) may be eligible for CMAQ funding if it can be shown to support the intermodal function of decreasing truck VMT.

2. Improved Public Transportation

Many transit projects are eligible for CMAQ funds [23 U.S.C. 149(b)]. The general guideline for determining eligibility is whether the project would result in an increase in transit ridership and/or a potential reduction in SOV travel and overall VMT. Projects that improve speed or reliability of transit services (e.g., replacement bus purchases). projects that improve access to transit facilities (e.g., bicycle and pedestrian enhancements near stations), and projects that increase transit capacity (e.g., reducing headways) would generally attract more passengers and would thereby qualify as increasing ridership. Projects that include features that improve the performance of existing transit systems (e.g., Intelligent Transportation System (ITS)) would improve operations and vehicle efficiency resulting in lower emissions and energy consumption. Some projects, such as busway construction, may qualify under both criteria. Project sponsors should present an estimate of expected increases in ridership or congestion relief as evidence of CMAQ eligibility. As with other types of CMAQ projects, there should also be a quantified estimate of the project's emissions benefits accompanying the proposal. To the extent practicable, projects resulting in greater emissions reductions and higher air quality benefits may be prioritized and selected to meet the goal and objectives of this program.

The FTA administers most transit projects and should be consulted when questions on eligibility of transit projects for CMAQ arise. For transit projects, after FTA determines that a project is eligible, CMAQ funds will be transferred, or "flexed," from FHWA to FTA, and the project will be administered according to the appropriate FTA program requirements. All CMAQ transfer requests should identify whether the CMAQ funds will be used for operating assistance or capital projects, and in what amount.

a. Transit Facilities

New transit facilities (e.g., lines, stations, terminals, transfer facilities, access improvements to stations or terminals) are eligible if they are associated with new or enhanced public transit, passenger rail, or other similar services. Routine maintenance or rehabilitation of existing facilities is not eligible, as it does not reduce emissions. However, rehabilitation, renovation, or improvements to a facility, and other elements involving refurbishment and replacement-in-kind may be eligible if the vast majority of the project involves physical improvements that will increase transit ridership. In such cases there should be supporting documentation showing the expected increase in transit ridership.

b. Conventional Bus and Paratransit Vehicles and Replacements

New transit vehicles (bus, rail, or van, including vehicles for paratransit service) to expand the fleet or replace existing vehicles are eligible. Under the BIL, this

eligibility has been expanded to include the purchase of medium or heavy-duty zero emission vehicles and related charging equipment [23 U.S.C. 149(b)(8)(C)]. Transit agencies are encouraged to purchase vehicles that are most cost-effective in reducing emissions. Diesel engine replacements or retrofits, such as replacement engines and exhaust after-treatment devices, are eligible if certified or verified by EPA or CARB. See discussion in Section V.C.1.c. Routine preventive maintenance for vehicles is not eligible as it only returns the vehicles to baseline conditions. Other than diesel engine replacements or retrofits, other transit equipment may be eligible if it will improve speed or reliability of transit service, such as re-fueling or recharging stations and advanced signal and communications systems.

c. Bus Service and Fleet Expansion

New bus service projects work to increase ridership by providing new or expanding bus services. New and expanded bus service improvement projects and fleet expansion reduce SOV travel and improve air quality in the local community by increasing the use of transit services and reducing the number of auto trips.

d. Passenger Rail Services

New passenger rail services include establishing new routes, increasing the frequency of current service, expanding the hours of operation, or expanding the overall coverage of transit corridors. New and expanded rail services provide mobility improvements in the form of increased transportation mode options for users in nonattainment or maintenance area are eligible for CMAQ funding.

e. Operating Assistance

Operating assistance to introduce new transit service or expand existing transit service is eligible. The eligibility applies regardless of the size of the urbanized area or whether a particular grantee is or was previously authorized to use funding under Chapter 53 of Title 49, U.S.C. for operating assistance. For a detailed discussion of operating assistance eligibility, including the changes regarding no imposed time limitations for certain transit systems, please see Section V.D.2. Fuel, whether conventional or alternative fuel, is an eligible expense only as part of a project providing operating assistance for new or expanded transit service under the CMAQ program. This includes fuels and fuel additives that EPA or CARB considers diesel retrofit technologies. Purchase of alternative fuels is authorized in some States based on the continuation of a series of exemptions for uses expressly eligible for CMAQ funding under Section 1808(k) of SAFETEA-LU and certain provisions in appropriations acts. The maximum allowable assistance level and time limitation described in Section V.D.2 will apply.

3. Traffic Flow Improvements

Programs or projects that improve traffic flow are eligible for CMAQ funds [23 U.S.C. 149(b)(5)]. Projects may include the following:

a. Traffic Signalization

Traffic signalization includes signalized intersection operation and traffic signal control systems. Traffic signals manage the right-of-way of competing traffic flows/users at roadway intersections. Traffic Signal Control Systems provide the capability to monitor performance, maintain, manage, and optimize the operation of traffic signals and traffic signal networks. Program funds may be used to support projects and traffic signal program activities, that improve the capabilities of traffic signals and traffic control systems to reduce congestion and improve air quality.

b. Traffic Engineering (Roadway Improvements)

Traffic engineering is the application of technologies to improve accessibility and roadway safety and manage traffic flow. Roadway improvements could reduce emissions by relieving congestion, smoothing traffic speed, and reducing idling.

c. Intersection Improvements

Intersection improvements are projects that increase the efficiency of the flow of traffic through an intersection. The primary source of emissions benefit is delay reduction of vehicles. These projects are differentiated from traffic signalization by focusing more on the physical roadway than the electronic signalization or monitoring of the location. Intersection improvement designs can prioritize traffic flow conditions to reduce the emissions impacts of delays, idling and, acceleration/deceleration. These improvements also aim to enhance safety not only for vehicles but also for bicyclists and pedestrians.

Intersection improvements may consist of:

- turn restrictions,
- turn lane additions,
- construction of interchanges instead of signalized intersections,
- and grade separations at transitway/railroad crossings.

d. High-Occupancy Vehicle and Managed Lanes

The CMAQ funds may be used to support the construction of new high-occupancy vehicle (HOV) or high-occupancy toll (HOT) lanes or the conversion of existing all-purpose lanes to HOV or HOT lane operations [23 U.S.C. 149(b)(5)]. A CMAQ funded HOV lane can be converted to a HOT lane on which variable tolls are charged to drivers of single or low occupancy vehicles [23 U.S.C. 166]. A CMAQ funded HOV lane can allow use by single occupancy vehicles only at non-peak travel times [23 U.S.C. 149(c)]. Managed lanes are freeway lanes that are set aside and operated using a variety of fixed and/or real-time strategies responding to local goals and objectives that move traffic more efficiently in those lanes.[5] Managed lanes, which include facilities such as HOT lanes or express toll lanes, are specialized lanes in corridors that control lane usage by vehicle eligibility, dynamic pricing, or access control.

[5] *See* FHWA Managed Lane Chapter for the Freeway Management and Operations Handbook, January 31, 2011.

The HOV-purposed managed lane facilities include carpool lanes, bus lanes, and exclusive HOV ramps and lots directly connected to HOV operation. An HOV lane is reserved for carpools of at least two passengers, vanpools, and buses. There are some other allowances per 23 U.S.C. 166.

e. Roundabouts

Roundabouts can be installed in place of a traditional signalized or un-signalized intersection. Roundabouts may provide environmental benefits if they reduce vehicle delay and the number and duration of stops compared with an alternative. Even when there are heavy volumes, vehicles continue to advance slowly in moving queues rather than coming to a complete stop. This may reduce noise and air quality impacts and fuel consumption significantly by reducing the number of acceleration/deceleration cycles and time spent idling.

4. Intelligent Transportation Systems

a. General Intelligence Transportation Systems (ITS)

The ITS is an operational system of various technologies that, when used singly or in combination, improves the efficiency or safety of a surface transportation system and improves air quality. Examples of ITS/transportation systems management and operations (TSMO) projects are regional multimodal traveler information systems, traffic signal control systems, freeway management systems, electronic toll-collection systems, transit management systems and incident management programs and activities to integrate the operation these systems.

b. Freeway Management Systems

The CMAQ funds can be used to establish or operate a traffic monitoring, management, and control facility or program if such projects are likely to contribute to the attainment or maintenance of NAAQS in the area [23 U.S.C. 149(b)(4)].

c. Traveler Information Systems

Traveler information systems update travelers on current roadway conditions—including delays, incidents, weather-related messages, travel times, emergency alerts, and alternate modes and routes. Providing this information to drivers and travelers both pre-trip and en-route through real-time traffic, transit, and multimodal traveler information can improve mobility by allowing them to make more effective travel decisions about changing routes, modes, departure times, or even destinations. Installation of traffic signs, including variable message signs, are eligible for 100 percent CMAQ funding based on 23 U.S.C. 120(c)(1) and 23 U.S.C. 149(b)(5).

d. Incident Management (emergency communication equipment)

Incident management programs enable regions to identify and respond to crashes or breakdowns with the best and quickest type of emergency services, minimizing clean-up and medical response time, and decreasing idling/backup time due to the incident. The CMAQ funds can be used to support a project or program that involves the purchase of integrated, interoperable emergency communications equipment [23 U.S.C. 149(b)(6)].

e. Vehicle to Infrastructure (V2I)

Projects or programs that involve the installation of vehicle-to-infrastructure communication equipment are eligible for CMAQ funds [23 U.S.C. 149(b)(9)]. V2I technologies capture vehicle-generated traffic data, wirelessly providing information such as advisories from the infrastructure to the vehicle that inform the driver of safety, mobility, or environment-related conditions. State and local agencies are likely to install V2I infrastructure alongside or integrated with existing ITS equipment. Because of this, the majority of V2I deployments may qualify for similar Federal-aid programs as ITS deployments, if the deploying agency meets certain eligibility requirements. Installation of vehicle-to-infrastructure communication equipment is eligible for 100 percent CMAQ funding based on 23 U.S.C. 120(c)(1).

5. Travel Demand Management

Travel demand management (TDM) encompasses a diverse set of activities that focus on physical assets and services that provide real-time information on network performance and support better decision-making for travelers choosing modes, times, routes, and locations. A TDM project or program may shift traffic demand to nonpeak hours, other transportation modes, or less congested routes and increases vehicle occupancy rates [23 U.S.C. 149(b)(7)]. Such projects can reduce SOV use, while enhancing air quality and saving energy resources. The TDM programs seek to optimize the performance of local and regional transportation networks. The following activities are eligible if they are explicitly aimed at reducing SOV travel that generates emissions reductions:

a. Parking: Park and Ride, Parking Pricing

Priced parking can include time-of-day parking charges that reflect congested conditions. These strategies should be designed to influence trip-making behavior and may include charges for using a parking facility at peak periods, or a range of employer-based parking pricing and cash-out policies that provide financial incentives to avoid parking on location or driving alone, or reducing the number of trips. Parking pricing integrated with other pricing strategies is encouraged.

b. Ridesharing: Carpooling and Vanpooling

Eligible activities can be divided into two types of costs: marketing (which applies to both carpools and vanpools) and vehicle (which applies to vanpools only).

Carpool/vanpool marketing covers existing, expanded, and new activities designed to increase the use of carpools and vanpools and includes purchase and use of computerized matching software and outreach to employers. Guaranteed ride home programs are also considered marketing tools.

Vanpool vehicle capital costs include purchasing or leasing vans for use in vanpools, and for projects under this section administered by FTA, with capital costs of contracting pursuant to FTA Circular 9030.1 E. The CMAQ funds can be used for eligible operating costs, empty-seat subsidies, maintenance, insurance, administration, and other related expenses. Prorated cost sharing plans that establish grant proportions for undefined shares of capital and operating costs should be broken down to the specific components or line items that establish the capital-operating shares.

The CMAQ funds should not be used to buy or lease vans that would directly compete with or impede private sector initiatives. States and MPOs should consult with the private sector prior to using CMAQ funds to purchase vans, and if private firms have definite plans to provide adequate vanpool service, CMAQ funds are not eligible to supplant that service.

In accordance with 23 U.S.C. 120(c)(1), carpooling and vanpooling activities may be supported with up to 100 percent Federal funding, under certain limitations.

c. Carsharing

Carsharing projects may involve the pooling of alternative fuel vehicles, provided to travelers who have occasional need for a vehicle but not the constant, daily necessity that demands ownership. As with any CMAQ project, sponsors need to demonstrate an emissions reduction from the carsharing program. Carshare programs that can demonstrate an emissions benefit may be eligible for operating assistance as discussed in Section V.D.2. If a program-wide emissions reduction cannot be demonstrated, CMAQ funding may only be available to support vehicle costs under Alternative Fuels and Vehicles eligibility, as discussed in Section V.C.1.a.

d. Bicycle and Pedestrian Facilities and Programs

Bicycle and Pedestrian

Bicycle and pedestrian facilities and programs are included as a TCM in Section 108(f)(l)(A) of the CAA (42 U.S.C. 7408(f)(l)(A)). Both construction and non-construction projects are eligible projects including:

- Constructing bicycle and pedestrian facilities (paths, bike racks, walkways support facilities, etc.) that are principally for transportation rather than recreational use and can be shown to reduce vehicle trips [23 U.S.C. 217(a)].
- Non-construction projects related to safe access for bicyclists and pedestrians [23 U.S.C. 217(a)].

- Establishing and funding State bicycle and pedestrian coordinator positions for promoting and facilitating nonmotorized transportation modes through public education, safety programs, etc. (up to two full-time positions per State) [23 U.S.C. 217(d)].

Only bicycle and pedestrian projects that are supported under 23 U.S.C. 217, Bicycle Transportation and Pedestrian Walkways, are eligible for CMAQ funding. Except for the bicycle and pedestrian coordinator positions, 23 U.S.C. 217 does not authorize salaries for administration, law enforcement, maintenance costs, and other items akin to operational support and, therefore, these are not allowable CMAQ costs.

Additional activities related to bicycle and pedestrian programs can be supported by other elements of the Federal-aid highway program. These efforts are described at the FHWA's Bicycle and Pedestrian Program Website.

Pedestrian Facility

Installation of new ADA-compliant sidewalks that provide improved pedestrian movement are eligible. However, stand-alone sidewalk replacement projects or making existing sidewalks ADA-compliant are not CMAQ eligible expenses as they are considered a maintenance activity and only return the facility to its original condition without generating any additional air quality benefits. Similarly, new pedestrian crosswalks may be eligible for CMAQ funds if they serve to complete a network of pedestrian improvements. Replacement for existing crosswalks is considered a maintenance activity and only returns the facility to its original condition without generating any additional air quality benefit.

e. Shared Micromobility

Shared micromobility refers to fleets of micromobility devices that are available to the public for shared use between multiple users. Operators deploy shared micromobility fleets in defined service areas to provide connections to other modes like public transportation to fully satisfy trips, and to provide transportation options for local trips. Shared micromobility provides communities with increased affordable, low- or no-emission transportation options. When replacing motor vehicle trips, micromobility can help encourage mode shift and reduce vehicle trips and emissions and improve access and mobility for underserved communities.

Bikesharing and Shared Scooter Systems

In general, capital costs that are integral to the establishment or expansion of bikesharing or shared scooter systems (including docks, equipment, and the purchase of bicycles, including e-bikes and scooters) are eligible for CMAQ funds. The CMAQ funds can be used for the construction of bicycle and shared micromobility transportation facilities [23 U.S.C. 217(a)]. The CMAQ funds may also be used to fund marketing and outreach efforts discussed in Section V.D.3

and some other costs related to safety and equitable access to the systems (e.g., facilities that provide for safe shared micromobility use and connection to public transit, and development of non-digital payment options that allow individuals without smart phones or credit cards to access shared micromobility services.) The CMAQ funds cannot be used for operational costs for bikeshare or shared scooter systems. Only bicycle and pedestrian programs that are supported under 23 U.S.C. 217 are eligible for CMAQ funds, such as operating assistance for bikeshare projects.

f. Value/Congestion Pricing

Congestion pricing programs allow tolls to rise and fall by time of day or traffic volume in order to manage congestion. Tolls can be charged electronically, thereby eliminating the need for full stops at tollbooths. In addition to the benefits associated with reducing congestion, revenue is generated that can be used to pay for a wide range of transportation improvements, including Title 23-eligible transit services in the newly tolled corridor.

Congestion pricing encompasses a variety of approaches, such as priced managed lanes (e.g., HOT lanes or express toll lanes), priced highway (pricing on all lanes of a roadway), priced zones (area or cordon pricing), priced road networks (pricing some or all lanes of a roadway network in an area or region), and priced parking.

As with any eligible CMAQ project, congestion pricing projects should generate a reduction in emissions. Eligible expenses for reimbursement include, but are not limited to: tolling infrastructure, such as transponders and other electronic toll or fare payment systems, and small roadway modifications to enable tolling. Marketing, public outreach, and support services, such as transit in a newly tolled corridor, to encourage the use of eligible pricing measures, are also eligible.

g. Employer-based Strategies: Teleworking, Alternative Work Hours, TMA, Guaranteed Ride Home, Shuttles

Employer-based strategies, such teleworking and alternative work hours schedules, allow workers to work from home and can reduce work-based SOV trips, resulting in emissions reduction. Eligible telecommuting activities include planning, preparing technical and feasibility studies, and training.

Transportation Management Associations (TMA) are groups of citizens, firms, or employers that organize to address the transportation issues in their immediate locale by promoting rideshare programs, transit, shuttles, or other measures. The TMAs can play a useful role in brokering transportation services to private employers.

Subject to applicable cost principles under 2 CFR Part 200, Subpart E, CMAQ funds may be used to establish TMAs provided that the programs that they support reduce emissions. Eligible expenses include TMA start-up costs and operating assistance subject to the limitations discussed in Section VII.A.2.

Eligibility of other applicable TMA activities such as marketing is addressed throughout this guidance.

6. Lock and Dam and Marine Highways

a. Lock and Dam

Projects are eligible for CMAQ funding if the project is for the modernization or rehabilitation of a lock and dam that is functionally connected to the Federal-aid highway system and that the Secretary determines is likely to contribute to the attainment or maintenance of a NAAQS [23 U.S.C. 149(b)(10)].

b. Marine Highways

The United States has an expansive network of navigable waterways including: rivers, bays, channels, coasts, the Great Lakes, open-ocean routes, and the Saint Lawrence Seaway System. This network forms "America's Marine Highway," a network of maritime expressways similar to America's road network. The Marine Highway system currently includes 26 "Marine Highway Routes" that serve as extensions of the surface transportation system. Each all-water route is designated by the DOT Secretary and offers relief to landside corridors suffering from traffic congestion, excessive air emissions, or other environmental challenges.

Projects that are on a marine highway corridor, connector, or crossing designated by the Secretary under section 46 U.S.C. 55601(c) (including an inland waterway corridor connector or crossing) may be eligible if it is functionally connected to the Federal-aid highway system and the Secretary determines the project is likely to contribute to the attainment or maintenance of a NAAQS [23 U.S.C. 149(b)(11)].

7. Vehicle Activity Programs

a. Idle Reduction

Idle reduction projects that reduce emissions and are located within, or in proximity to and primarily benefiting, a nonattainment or maintenance area are eligible for CMAQ investment. Advanced truck stop electrification (TSE) systems are good example of an idle reduction program [23 U.S.C. 149(b)(4)].

The CMAQ funding for TSE projects has been limited to capital costs (e.g., deployment of TSE infrastructure). Operating assistance for TSE projects is not eligible under the CMAQ program, since TSE projects generate their own revenue stream and, therefore, should be able to cover all operating expenses from the accumulated revenue.

Commercial idle reduction facilities cannot be located within rest areas of the Interstate right-of-way (ROW), subject to the limitations of 23 U.S.C. 111.

If CMAQ funding is used for an on-board project (e.g., auxiliary power units, direct fired heaters, etc.) the vehicle, usually a heavy-duty truck, should travel within, or in proximity to and primarily benefiting, a nonattainment or maintenance area. Idle reduction devices and technologies are verified by the EPA.

b. Extreme Low-Temperature Cold Start Programs

Projects intended to reduce emissions from extreme cold-start conditions are eligible for CMAQ funding. Such projects include retrofitting vehicles and fleets with water and oil heaters and installing electrical outlets and equipment in publicly owned garages or fleet storage facilities, and electrification projects related to the reduction of cold-start emissions.

8. Other CMAQ Eligible Projects

a. Dust Mitigation

Projects that reduce dust in PM_{10} areas include paving or treating dirt or gravel roads and purchasing street sweeping equipment [23 U.S.C. 149(c)(1)].

b. Inspection and Maintenance Programs

Funds under the CMAQ program may be used to establish either publicly or privately owned Inspection and Maintenance (I&M) facilities. Eligible activities include construction of facilities, purchase of equipment, I&M program development, and one-time start-up activities, such as updating quality assurance software or developing a mechanic training curriculum. The I&M program must constitute new or additional efforts; existing funding (including inspection fees) should not be displaced. Operating expenses for I&M facilities are eligible. However, I&M programs that incorporate other elements of a State's vehicle administrative function (e.g., registration) are not allowable costs. The establishment of "portable" I&M programs, including remote sensing, is also eligible under the CMAQ program, provided that they are public services, reduce emissions, and do not conflict with statutory I&M requirements or applicable EPA regulations.

c. Training

States and MPOs may use Federal-aid funds, including CMAQ funds to support training and educational development for the transportation workforce and these activities may be funded at 100 percent [23 U.S.C. 504(e)] with some exceptions[6]. Some activities are subject to applicable cost principles in 2 CFR Part 200, Subpart E. The FHWA encourages State and local officials to weigh the air quality benefits of such training against other cost -effective strategies detailed elsewhere in this guidance before using CMAQ funds for this purpose.

[6] Guidance for Use of Federal-aid Formula Program Funds for Training, Education and Workforce Development Title 23, United States Code, Section 504(e), December 5, 2022. https://www.fhwa.dot.gov/innovativeprograms/pdfs/504e_state_core_programs_guidance_0318.pdf?date=20221209

d. Innovative Projects

State and local organizations have worked with various types of transportation services to better meet the travel needs of their constituents. These innovative projects also may show promise in reducing emissions, but do not yet have supporting data. The FHWA has supported and funded some of these projects as demonstrations to determine their benefits and costs and seek to better define the projects' future role in strategies to reduce emissions. Such innovative strategies must meet basic project eligibility.

For a project or program to qualify as an innovative project, it should be defined as a transportation project and be expected to reduce emissions by decreasing VMT, fuel consumption, improving transportation systems management and operations that mitigate congestion and improve air quality,, or by other factors. The FHWA encourages States and MPOs to creatively address their air quality problems and to consider new services, innovative financing arrangements, PPPs, and complementary approaches that use transportation strategies to reach clean air goals.

Given the untried nature of these innovative projects, before-and-after studies should be completed to determine actual project impacts on air quality as measured by net emissions reduced. These assessments should document the project's immediate impacts in addition to long-term benefits. A schedule for completing the study should be a part of the project agreement. Completed studies should be submitted to the FHWA Division office within 3 years of implementation of the project or 1 year after the project's completion, whichever is sooner.

e. Incentives

There may be limited circumstances where the use of an incentive might be eligible if associated with an eligible CMAQ project type such as financial incentives as part of the parking pricing strategy to avoid parking or driving alone or incentives as part of employer-based transportation management plans as described in the Clean Air Act section 108(f)(1)(A). An incentive may also be an eligible project cost as part of an eligible CMAQ project or program if it is demonstrated that the incentive itself directly contributes to an emissions benefit such as inducing a shift of traffic demand to nonpeak hours or other transportation modes, increases vehicle occupancy rates, or otherwise reduces demand for roads through such means as telecommuting, ridesharing, carsharing, shared micromobility (including bikesharing and shared scooter systems), alternative work hours and pricing (23 U.S.C. 149(b)(7)). It is expected that such shifts in behavior would be tracked and documented (in a before and after study) to show the effectiveness of the incentive. The eligibility determination on CMAQ eligible projects that use incentives would need to be reviewed and determined on a case-by-case basis.

f. Optional Programmatic Eligibility

The MPOs have the flexibility to conduct a technical assessment of the program of CMAQ projects under review that fulfills the requirement for an emissions reduction demonstration. This technical assessment is fully optional and can include the full program as listed in the TIP or STIP or a subset of that full program. The technical methods are at the discretion of the MPO but can include modeling or other contemporary tools generally found acceptable by professionals in the field. If the assessment is successful in demonstrating an emissions reduction, no further analysis will need to be provided by the MPO for those projects included, and these efforts can proceed to CMAQ obligation. However, emissions reductions also should be demonstrated for CMAQ projects not included in the selected subset covered by the technical assessment [23 U.S.C. 149(j)].

g. TCMs That Are Not Covered in Other Sections of This Guidance

Although unexpected, there may be other project types or activities not explicitly described in other sections of this guidance that arise or develop that are consistent with the requirements for CMAQ funding. State DOTs should consult with FHWA and FTA to discuss any such projects. In addition, TCMs in Section 108(f) of the CAA are eligible for CMAQ funds [23 U.S.C. 149(b)(1)(B)]. Eligible TCMs which are not specifically addressed elsewhere in this guidance include:

- Trip-reduction ordinances [42 U.S.C. 7408(f)(1)(A)(iv)].
- Programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use [42 U.S.C. 7408(f)(1)(A)(vii)].
- Programs and ordinances to facilitate non-automobile travel, provision, and utilization of mass transit, and to generally reduce the need for single-occupant vehicle travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity [42 U.S.C. 7408(f)(1)(A)(xiv)].

D. Eligible Costs

1. Capital Investments

Capital expenses associated with CMAQ-eligible projects may be an eligible expense. Such expenses can include but are not limited to, for example:

- *Congestion pricing*: tolling infrastructure such as transponders and other electronic toll or fare payment systems or small roadway modifications to enable tolling.
- *Freight*: rolling stock or ground infrastructure.
- *Bike sharing*: bike sharing docks, equipment, and the purchase of bicycles.

2. Operating Assistance

a. General

Operating assistance is eligible for projects under Chapter 53 of Title 49, U.S.C. [23 U.S.C. 149(m)(1)(A)]. Operating assistance is directed to the startup operating costs for new transportation services or the incremental costs of expanding such services including transit, commuter and intercity passenger rail services, intermodal facilities, and travel demand management strategies, including traffic operation centers and carshares.

In using CMAQ funds for operating assistance, the intent is to help start up viable new transportation services that can demonstrate air quality benefits and eventually have the operators cover their costs with other funds. Other funding sources should supplement and ultimately replace CMAQ funds for operating assistance, as these projects no longer represent additional, net air quality benefits but have become part of the baseline transportation network. The provisions in 23 U.S.C. 116 place responsibility for maintenance of transportation facilities on the States. Since facility maintenance is akin to operations, a time -limited period of CMAQ assistance provides adequate incentive and flexibility while not creating a pattern of excessive or even perpetual support.

Operating assistance includes all costs of providing new transportation services, including, but not limited to, labor, fuel, administrative costs, and maintenance. When CMAQ funds are used for operating assistance, non-Federal share requirements still apply.

The focus for operating assistance is on start-up of new services and therefore is typically limited to 3 years of assistance for most projects, except as addressed under unlimited operating assistance (see D.2.b.). However, recognizing the importance of flexibility in the timing of financial assistance, operating assistance may be extended to 5 sequential years of support. This approach will provide an incremental, taper-down approach, while other funding is used for a higher proportion of the operating costs as needed. At the conclusion of the 5-year period, operating costs would have to be maintained with non-CMAQ funding. It is anticipated that this approach may enable a transition to more independent system operation. The amounts, which apply to years 1 and/or 2, are established at the discretion of the State or local sponsor. This time limitation does not apply to systems that are allowed to use CMAQ funds for operating assistance with no time limitations [23 U.S.C. 149(m)(2)].

Projects or activities that already have received 3 years of operating assistance under prior authorizations of the CMAQ program are not considered to be in a start-up phase and are not eligible for the expanded assistance period.

Elements of operating assistance prohibited by statute or regulation are not eligible for CMAQ participation, regardless of their emissions or congestion reduction potential.

b. Operating Assistance with No Time Limitation

The Operating Assistance section of the CMAQ program prohibits the imposition of a time limitation for operating assistance eligibility for the following three categories [23 U.S.C. 149(m)(2)][7]:

(1) A system "for which CMAQ funding was eligible, made available, obligated or expended in FY 2012." The phrase "made available" applies to projects designated for CMAQ operating assistance in statute, or to any commitment by the party that by law selects projects for operating assistance funding so long as it occurred during FY 2012. There must be official documentation demonstrating that there was a specific commitment in FY 2012 to provide CMAQ funding for operating assistance for a particular project or service. Such official documentation could include a TIP or STIP, or other State or MPO official records. The specific project or service for which the CMAQ funds are being sought for operating assistance without a time limitation must be identified in this documentation. Transportation services expressly eligible for CMAQ funding under SAFETEA-LU Sections 1808(g)-(k) and certain provisions in previous appropriations acts are eligible to use CMAQ funds for operating assistance without time limitations.
(2) A State-supported Amtrak route with a valid cost-sharing agreement under section 209 of the Passenger Rail Investment and Improvement Act of 2008 (49 U.S.C. 24101) even in areas with no current nonattainment areas.
(3) A transit system located in a non-urbanized areas or an urbanized area with a population 200,000 or fewer.

3. Public Education/Outreach and Technical Assistance

The goal of CMAQ-funded public education and outreach activities is to support CMAQ program or CMAQ-eligible projects in educating the public, community leaders, and potential project sponsors about connections among trip making and transportation mode choices, traffic congestion, and air quality.

A wide range of public education and outreach activities are eligible for CMAQ funding in support of eligible programs and projects. Such activities may include those that promote new or existing transportation services, developing messages and advertising materials (e.g., market research and focus groups), placing messages and materials, evaluating message and material dissemination and public awareness, technical assistance, programs that promote the Internal Revenue Code provision related to commute benefits, transit "store" operations, and any other activities that help promote less-polluting transportation options.

[7] Note that 23 U.S.C. 149(b)(4) provides eligibility to establish or operate a traffic monitoring, management, and control facility or program, including advanced truck stop electrification systems, if the Secretary, after consultation with the Administrator of the EPA, determines that the facility or program is likely to contribute to the attainment or maintenance in the area of a national ambient air quality standard.

Long-term public education and outreach can be effective in raising awareness that can lead to changes in travel behavior and ongoing emissions reductions; therefore, these activities may be funded indefinitely but should be broken out as distinct line items.

As noted in the diesel replacement and retrofits provisions of the statute, outreach activities that provide information and technical assistance to diesel owners and operators on retrofit options are eligible investments that may be funded indefinitely. These projects could include the actual education and outreach program and other efforts to promote the use of retrofit technologies [23 U.S.C. 149(b)(8)(B)].

4. Transit Fare Subsidies

The CMAQ funds may be used to subsidize regular transit fares in an effort to prevent the NAAQS from being exceeded, but only if the reduced or free fare is part of a comprehensive area-wide program to prevent such an anticipated exceedance. For example, "Ozone Action" programs vary in scope around the country, but they generally include actions that individuals and employers can take, and they are aimed at all major sources of air pollution, not just transportation. The subsidized fare should be available to the general public and may not be limited to specific groups. It may only be offered during periods of elevated pollution when the threat of exceeding the NAAQS is greatest (i.e., it is not intended for the entire high-ozone season). The fare subsidy proposal should demonstrate that the responsible local agencies will combine the reduced or free fare with a robust marketing program to inform SOV drivers of other transportation options. Because the fare subsidy is not strictly a form of operating assistance, it would not be subject to the 5-year limit.

E. Specific Requirements

1. Costs Principles and other Regulatory Requirements

The CMAQ projects must comply with other applicable Federal requirements, including those affecting determinations of eligible project costs. All Federal projects must conform to the appropriate cost principles for Federal aid. The CMAQ projects are subject to Title 2, Code of Federal Regulations (CFR) Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards. In particular, Subpart E, “Cost Principles” focuses on determining the allowable costs for the subject government entities and also provides a discussion of the relationship between appropriate costs and the purpose of the program. For example, under 2 CFR 200.421(e)(3) Advertising and Public Relations, the purchase of promotional items, including gifts and souvenirs is not an allowable cost.

In addition, all Federal-aid projects including all CMAQ funded projects, must be included in the MPO’s current transportation plan and TIP, where applicable, and in the current STIP before project initiation. [23 U.S.C. 149(e)] In nonattainment and maintenance areas, the project must also meet the conformity provisions contained in Section 176(c) of the CAA and EPA’s transportation conformity regulations (40 CFR part 93). Lastly, all CMAQ-funded projects need to complete National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*) requirements and satisfy

the basic eligibility requirements under titles 23 and 49 of the U.S.C. (e.g., Buy America).

2. Planning and Project Development

Activities in support of other Title 23-eligible projects also may be appropriate for CMAQ investments. All phases of CMAQ-eligible projects--not only construction--are eligible for CMAQ funding. For example, studies that are part of the project development pipeline (i.e., preliminary engineering) under NEPA are eligible for CMAQ support. General studies that fall outside specific project development do not qualify for CMAQ funding. Examples of such ineligible efforts include major investment studies, commuter preference studies, modal market polls or surveys, transit master plans, and others. These activities are eligible for Federal planning funds.

VI. CMAQ PERFORMANCE MANAGEMENT

A. Performance Measures

The 23 U.S.C. 150(c)(5) requires the establishment of performance measures to assess traffic congestion and on-road mobile source emissions for the purpose of carrying out the CMAQ Program. Table 2 summarizes the CMAQ performance measures.

Table 2: Subparts G and H of 23 CFR Part 490 established three performance measures for assessing the CMAQ program (§ 490.707 in subpart G and § 490.807 in subpart H):

Subpart and Measure	Measure Description
Subpart G: Traffic Congestion	**Peak Hour Excessive Delay (PHED) Measure:** Annual Hours of Peak Hour Excessive Delay (PHED) Per Capita
	Percent of Non-Single Occupancy Vehicle (Non-SOV) Travel Measure: Percent of Non-Single Occupancy Vehicle (SOV) Travel
Subpart H: On-Road Mobile Source Emissions	**Total Emissions Reduction Measure**: 2- and 4-year Total Emission Reductions for each applicable criteria pollutant and precursor for all projects funded with CMAQ funds

To assist State DOTs and MPOs with calculating the CMAQ performance measures, FHWA developed the following reference documents:

1. FHWA Computation Procedure for Travel Time Based and Percent Non-Single Occupancy Vehicle (non-SOV) Travel Performance Measures

2. FHWA National Performance Measures for Congestion, Reliability, and Freight, and CMAQ Traffic Congestion
3. Computation Guidance for Congestion Mitigation and Air Quality Improvement (CMAQ) Program Total Emissions Reduction Measure

B. CMAQ MPO Performance Plan

Per 23 U.S.C. 149(l), each MPO serving a transportation management area (TMA as defined in 23 U.S.C. 134) with a population over 1,000,000 people representing a nonattainment or maintenance area must develop a performance plan that:

- includes an area baseline level for traffic congestion and on-road mobile source emissions for which the area is in nonattainment or maintenance;
- describes progress made in achieving the air quality and traffic congestion performance targets described in 23 U.S.C. 150(d); and
- includes a description of projects identified for funding under this section and how such projects will contribute to achieving emission and traffic congestion reduction targets.

Performance Plans shall be updated biennially and include a separate report that assesses the progress of the program of projects under the previous plan in achieving the air quality and traffic congestion targets of the previous plan. [23 U.S.C. 149(l)]

The BIL permits, upon request of an MPO serving a TMA with population of 1,000,000 or more, DOT to assist the MPO in tracking progress made in minority or low-income populations as part of a performance plan [23 U.S.C. 149(l)(3)].

To assist MPOs with the development of CMAQ Performance Plans, FHWA developed this reference document: Congestion Mitigation and Air Quality Improvement Program: A Guidebook for Preparing Performance Plans for Metropolitan Planning Organizations.

C. Applicability for CMAQ Performance Measures and Performance Plans

The FHWA publishes lists of State DOTs and MPOs who are required to establish targets and report progress for the performance measures related to CMAQ, as established in 23 CFR Part 490 (§ 490.707 and § 490.807). Table 3 provides a summary of CMAQ performance measure applicability.

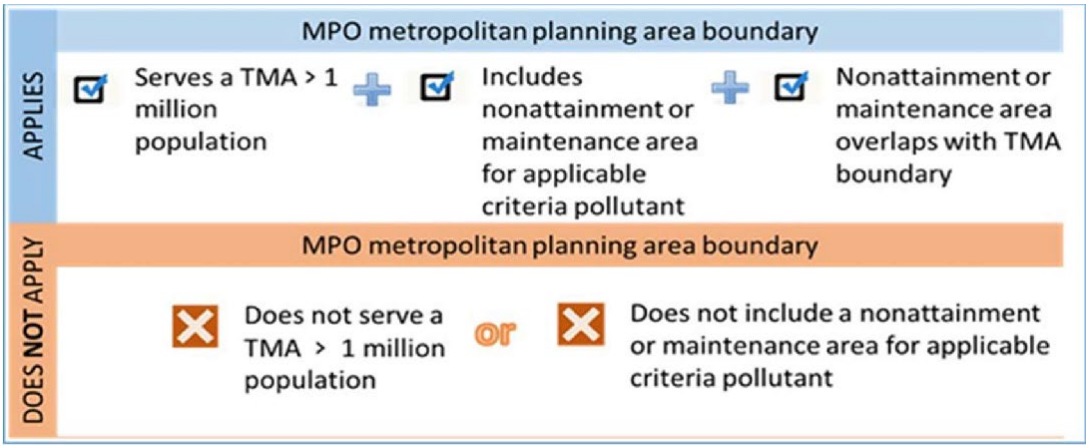
Table. 3. Summary of CMAQ Performance Measure Applicability

CMAQ Performance Measure	State DOTs	MPOs
On-Road Mobile Source Emissions	States with projects financed with funds from the 23 U.S.C.149 CMAQ program apportioned to State DOTs for areas designated as nonattainment or maintenance for ozone (O3), CO, or PM	The MPOs with projects financed with funds from the 23 U.S.C.149 CMAQ program apportioned to State DOTs for areas designated as nonattainment or maintenance for O3, CO, or PM
Traffic Congestion	Urbanized areas that include NHS mileage and with a population over 200,000 that are, in all or part, designated as nonattainment or maintenance areas for O3, CO, or PM	Urbanized areas that include NHS mileage and with a population over 200,000 that are, in all or part, designated as nonattainment or maintenance areas for O3, CO, or PM

The CMAQ performance measures do not apply to any area that has reached its 20-year maintenance period or is no longer categorized as nonattainment or maintenance for a criteria pollutant 1-year before the State DOT Baseline Performance Report or the Mid Performance Period Report is due [23 CFR 490.709(h) and (23 CFR 490.809(c)].

The MPOs serving a TMA with a population over 1 million that includes a nonattainment or maintenance area are required to develop a CMAQ performance plan, updated biennially. (23 U.S.C. 149(l)). Figure 1 summarizes CMAQ performance plans applicability.

Figure 1. Applicability of a CMAQ Performance Plan Under 23 U.S.C. 149(l)



Appendix A: List of Transportation Control Measures

Transportation Control Measures that are listed in Section 108(f)(1)(A) of the Clean Air Act [42 U.S.C. 7408(f)(1)(A)] are eligible for CMAQ funds, with the exception of Clause (xvi) [23 U.S.C. 149(b)(1)(A)]:

(f) Information regarding processes, procedures, and methods to reduce or control pollutants in transportation; reduction of mobile source related pollutants; reduction of impact on public health

(1) The Administrator shall publish and make available to appropriate Federal, State, and local environmental and transportation agencies not later than one year after November 15, 1990, and from time to time thereafter

(A) information prepared, as appropriate, in consultation with the Secretary of Transportation, and after providing public notice and opportunity for comment, regarding the formulation and emission reduction potential of transportation control measures related to criteria pollutants and their precursors, including, but not limited to

(i) programs for improved public transit;

(ii) restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high occupancy vehicles;

(iii) employer-based transportation management plans, including incentives;

(iv) trip-reduction ordinances;

(v) traffic flow improvement programs that achieve emission reductions;

(vi) fringe and transportation corridor parking facilities serving multiple occupancy vehicle programs or transit service;

(vii) programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use;

(viii) programs for the provision of all forms of high-occupancy, shared-ride services;

(ix) programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place;

(x) programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;

(xi) programs to control extended idling of vehicles;

(xii) programs to reduce motor vehicle emissions, consistent with subchapter II, which are caused by extreme cold start conditions;

(xiii) employer-sponsored programs to permit flexible work schedules;

(xiv) programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for single-occupant vehicle travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity;

(xv) programs for new construction and major reconstructions of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest. For purposes of this clause, the Administrator shall also consult with the Secretary of the Interior; and

[Not eligible for CMAQ funds:] (xvi) program to encourage the voluntary removal from use and the marketplace of pre-1980 model year light duty vehicles and pre-1980 model light duty trucks.