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 elevated to headquarters if necessary.

B. Maintenance Areas

CMAQ funds may be invested in maintenance areas that have approved maintenance plans under CAA section 175A. In States with ozone or CO maintenance areas but no nonattainment areas, mandatory CMAQ funds must be used in the maintenance areas.21

C. Maintenance Plan Requirement, SAFETEA-LU

CMAQ funds may be invested in former 1-hour ozone areas that were not designated under the 8-hour standard but where the 1-hour standard has been revoked. Since these areas are required to file maintenance plans, they are considered eligible for CMAQ funding under provisions of the SAFETEA-LU.22

D. Flexible Funds in PM Areas

While States may use flexible CMAQ funding anywhere and for any CMAQ- or STP-eligible project (see V.B. on minimum apportionment), the FHWA encourages States and MPOs to evaluate the cost-effectiveness and benefits to public health of targeting flexible CMAQ funding to projects that reduce PM. Examples of such projects include implementing a diesel retrofit or idle reduction program, constructing freight/intermodal transfer facilities, traffic signalization, or ITS projects that reduce congestion; paving dirt roads, and purchasing street sweeping equipment.

VII. PROJECT ELIGIBILITY PROVISIONS

A. Project Eligibility: General Conditions

To be eligible for CMAQ funds, a project must be included in the MPO’s current transportation plan and TIP (or the current STIP in areas without an MPO). In nonattainment and maintenance areas, the project also must meet the conformity provisions contained in section 176(c) of the Clean Air Act and the transportation conformity regulations.23 In addition, all CMAQ-funded projects need to complete National Environmental Policy Act (NEPA) requirements and meet basic eligibility requirements for funding under titles 23 and 49 of the United States Code.

The following should guide CMAQ eligibility decisions:

1. Capital Investment

21 23 U.S.C. §149(b)
22 23 U.S.C. §149(b) (SAFETEA-LU §1808(a))
23 40 CFR Parts 51 and 93
CMAQ funds may be used to establish new or expanded transportation projects or programs that reduce emissions, including capital investments in transportation infrastructure, congestion relief efforts, diesel engine retrofits, or other capital projects.
2. Operating Assistance

There are several general conditions that must be met for operating assistance to be eligible under the CMAQ program:

a. Operating assistance is limited to new transit services, intermodal facilities, and travel demand management strategies (including traffic operation centers); and the incremental cost of expanding existing transit services.

b. 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 cover their costs as much as possible. 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.

c. Operating assistance includes all costs of providing new transportation services, including, but not limited to, labor, fuel, administrative costs, and maintenance.

d. When CMAQ funds are used for operating assistance, non-Federal share requirements still apply.

e. With the focus on start-up costs only, operating assistance under the CMAQ program is limited to three years. The provisions in 23 U.S.C. §116 place responsibilities for maintenance on States. Since facility maintenance is akin to operations, three years of CMAQ assistance provides adequate incentive and flexibility while not creating a pattern of excessive or even perpetual support. Exceptions are listed below under VII.D.7 Travel Demand Management, VII.D.8 Public Education, and VII.D.10 Carpooling and Vanpooling.

3. Emission Reduction

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, the FHWA uses emission reduction to represent this group of terms. CMAQ-invested projects or programs must reduce CO, ozone precursor (NOx and VOCs), PM, or PM precursor (e.g., NOx) emissions from transportation; these reductions must contribute to the area’s overall clean air strategy and can be demonstrated by the assessment that is required under this guidance. States and MPOs also may consider the ancillary benefits of eligible projects, including greenhouse gas reductions, congestion relief, safety, or other elements, when programming CMAQ funds, though such benefits do not alone establish eligibility.

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25 23 U.S.C. §149(b)
4. Planning and Project Development

Activities in support of eligible projects also may be appropriate for CMAQ investments. Studies that are part of the project development pipeline (e.g., preliminary engineering) under NEPA are eligible for CMAQ support, as are FTA’s Alternatives Analyses. General studies that fall outside specific project development do not qualify for CMAQ funding. Examples of such 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.

B. Projects Ineligible for CMAQ Funding

The following projects are ineligible for CMAQ funding:

1. Light-duty vehicle scrappage programs.26
2. Projects that add new capacity for SOVs are ineligible for CMAQ funding unless construction is limited to high-occupancy vehicle (HOV) lanes.27 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, 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.28 Other funding sources, such as STP and FTA’s Section 5307 program, are available for such activities.
4. Administrative costs of the CMAQ program may not be defrayed with program funds, e.g., support for a State’s “CMAQ Project Management Office” is not eligible.
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. One exception is listed below in Section VII.D.3.29

C. Public-Private Partnerships (PPPs)

In a 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. The PPP elements of the program have been refined over the last two transportation reauthorizations, and these partnerships have become a critical part of CMAQ.30

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

26 23 U.S.C. §149(b)
27 23 U.S.C. §149(b)
28 23 U.S.C. §116
29 23 U.S.C. §149(k)
30 23 U.S.C. §149(e)
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).

Public funds should not be invested where a strong public benefit cannot be demonstrated. Consequently, CMAQ funds should be devoted to PPPs that benefit the general public by clearly reducing emissions, not for financing marginal projects. Consistent with the planning and project selection provisions of the Federal-aid highway program, the 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 this section should not include costs to fund an obligation imposed on private sector or non-profit entities under the CAA or any other Federal law. However, if the private or non-profit entity is clearly exceeding its obligations under Federal law, CMAQ funds may be used for that incremental portion of the project.

Eligible non-monetary activities that satisfy the non-Federal match requirements under the partnership provisions include the following:

- Ownership or operation of land, facilities, or other physical assets
- Construction or project management
- Other forms of participation approved by the U.S. DOT

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/local match. For detailed information on cost principles beyond the scope of this guidance, please consult OMB Circular A-87, which focuses on determining allowable costs for State, local, and tribal governments; and 49 CFR Part 18, which provides direction on administering Federal grants to State and local governments.

D. Eligible Projects and Programs

Eligibility information is provided below. Not all possible requests for CMAQ funding are covered—this section provides examples of activities eligible for CMAQ funds.

1. Transportation Control Measures (TCMs)

Most of the TCMs included in Section 108 of the CAA, listed below, are eligible for CMAQ funding. One CAA TCM, programs to encourage removal of pre-1980 light-duty vehicles, is specifically excluded from CMAQ eligibility.

i. programs for improved public transit;

31 23 U.S.C. § 149(e)(5)
ii. restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or HOV;

iii. employer-based transportation management plans, including incentives;

iv. trip-reduction ordinances;

v. traffic flow improvement programs that reduce emissions;

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. reducing emissions from 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 SOV 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; and

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.

2. 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 (See Section VII.C. for a possible expansion to privately-owned equipment and facilities).

3. Alternative Fuels and Vehicles

Fuel

With the exception of Missouri, Iowa, Minnesota, Wisconsin, Illinois, Indiana, and Ohio, fuel costs are not an eligible expense as a stand-alone project.33 Only these seven States may use CMAQ funds to purchase the alternative fuels defined in section 301 of the 1992 Energy Policy Act (natural gas, ethanol, etc.) or biodiesel, assuming such projects meet other applicable eligibility requirements noted in Section VII.B. above.

33 SAFETEA-LU, §1808(k)
Establishing publicly-owned fueling facilities and other infrastructure needed to fuel alternative-fuel vehicles is an eligible expense, unless privately-owned fueling stations are in place and reasonably accessible. Additionally, CMAQ funds may support converting a private fueling facility to support alternative fuels through a public-private partnership agreement (See Section VII.C.).

**Non-transit Vehicles**

CMAQ funds may be used to purchase publicly-owned alternative fuel vehicles, including passenger vehicles, refuse trucks, street cleaners, and others. Costs associated with converting fleets to run on alternative fuels are also eligible. When private vehicles are purchased, only the cost difference between the alternative fuel vehicles and comparable conventional fuel vehicles is eligible. Such vehicles should be fueled by one of the alternative fuels identified in section 301 of the 1992 Energy Policy Act or biodiesel. Eligible projects also include alternatives to diesel engines and vehicles.

**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 investment. Hybrid passenger vehicles must meet EPA’s low emissions and energy efficiency requirements for certification under the HOV exception provisions of the SAFETEA-LU to be eligible for CMAQ funding.\(^{34}\) [NOTE: The final rule is in the last stages of review, although no date set for publication in the Federal Register, as of November 14, 2008].

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 other comparable models.

4. **Congestion Reduction & Traffic Flow Improvements**

Traffic flow improvements may include the following:

a. **Traditional Improvements**

   Traditional traffic flow improvements, such as the construction of roundabouts, HOV lanes, left-turn or other managed lanes, are eligible for CMAQ funding provided they demonstrate net emissions benefits.

b. **Intelligent Transportation Systems**

   Intelligent Transportation Systems (ITS) projects, such as traffic signal synchronization projects, traffic management projects, and traveler information

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\(^{34}\) 23 U.S.C. §166(e) (SAFETEA-LU §1121(a)). The required rulemaking developed by EPA has been published in the Federal Register at 72 FR 29102, [http://www.epa.gov/fedrgstr/EPA-AIR/2007/May/Day-24/a9821.htm](http://www.epa.gov/fedrgstr/EPA-AIR/2007/May/Day-24/a9821.htm)
systems, can be effective in relieving traffic congestion, enhancing transit bus performance, and improving air quality. The following have the greatest potential for improving air quality:

- Regional multi-modal traveler information systems
- Traffic signal control systems
- Freeway management systems
- Electronic toll-collection systems
- Transit management systems
- Incident management programs

A lengthier discussion of the benefits associated with various operational improvements can be found at: http://ops.fhwa.dot.gov/program_areas/programareas.htm

c. Value/Congestion Pricing

As part of its Congestion Initiative referenced above, the Department broadly promotes highway congestion pricing and is also seeking an area-wide demonstration of the effectiveness of congestion pricing (along with other elements). Congestion pricing is a market-based mechanism that allows tolls to rise and fall depending on available capacity and demand. It has gained increasing attention and popularity in recent years following several highly successful facility demonstrations in the U.S. and several network wide demonstrations abroad. Tolls can be charged electronically, thereby eliminating the need for 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.

Parking pricing 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 cash-out policies that provide financial incentives to avoid parking or driving alone. Parking pricing integrated with other pricing strategies is encouraged.

Pricing encompasses a variety of market-based approaches such as:

- **HOT lanes**, or High Occupancy Toll lanes, on which variable tolls are charged to drivers of low-occupancy vehicles using HOV lanes, such as the “FasTrak” Lanes on I-15 in San Diego and the recently converted I-394 in Minneapolis in which prices vary dynamically every two minutes based on traffic conditions
- **New variably tolled express lanes** on existing toll-free facilities, such as the “91 Express Lanes” on State Route 91 in Orange County, CA
- **Variable tolls on existing or new toll roads**, such as on the bridges and tunnels operated by the Port Authority of New York and New Jersey
Federal Highway Administration

- **Network-wide or cordon pricing**, such as implemented in Stockholm, London and Singapore
- **Usage-based vehicle pricing**, such as mileage-based vehicle taxation being explored by the State of Oregon, or pay-per-mile car insurance

As with any eligible CMAQ project, value pricing should generate an emissions reduction. Marketing and outreach efforts to expand and encourage the use of eligible pricing measures may be funded indefinitely. Eligible expenses for reimbursement include, but are not limited to: tolling infrastructure, such as transponders and other electronic toll or fare payment systems; small roadway modifications to enable tolling, marketing, public outreach, and support services, such as transit in a newly tolled corridor. Innovative pricing approaches yet to be deployed in the U.S. also may be supported through the Value Pricing Pilot Program. A more complete discussion of projects currently underway in the U.S. can be found at: http://ops.fhwa.dot.gov/tolling_pricing/value_pricing/index.htm.

Operating expenses for traffic flow improvements are eligible for CMAQ funding for three years if they can be shown to produce air quality benefits, if the expenses are incurred from new or additional services, and if previous funding mechanisms, such as fares or fees for services, are not displaced.

Projects or programs that involve the purchase of integrated, interoperable emergency communications equipment are eligible for CMAQ funding.35

5. Transit Improvements

Many transit projects are eligible for CMAQ funds. The general guideline for determining eligibility is whether the project increases capacity and would likely result in an increase in transit ridership and a potential reduction in congestion. As with other types of CMAQ projects, there should be a quantified estimate of the project’s emissions benefits accompanying the proposal.

The FTA administers most transit projects. Once the FTA determines a project eligible, CMAQ funds will be transferred from the FHWA to the FTA, and the project will be administered according to the requirements of the FTA’s Urbanized Area Formula Grant Program.36 Certain types of transit projects for which the FTA lacks statutory authority, such as diesel retrofit equipment for public school bus fleets, are administered by the FHWA.

a. Facilities

New transit facilities (e.g., lines, stations, terminals, transfer facilities) are eligible if they are associated with new or enhanced mass transit service. Routine maintenance or rehabilitation of existing facilities is not eligible, as it does not reduce emissions. However, rehabilitation of a facility may be eligible if the vast

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35 23 U.S.C. §149(b)(6) (SAFETEA-LU §1808(b)(4))
36 49 U.S.C. §5307
Federal Highway Administration

majority of the project involves physical improvements that will increase capacity. In such cases there should be supporting documentation showing an increase in transit ridership that is more than minimal. If the vast majority of the project involves capacity enhancements, other elements involving refurbishment and replacement-in-kind also are eligible.

b. Vehicles and Equipment

New transit vehicles (bus, rail, or van) to expand the fleet or replace existing vehicles are eligible. Transit agencies are encouraged to purchase vehicles that are most cost-effective in reducing emissions. Diesel engine retrofits, such as replacement engines and exhaust after-treatment devices, are eligible if certified or verified by the EPA or California Air Resources Board (CARB). Routine preventive maintenance for vehicles is not eligible as it only returns the vehicles to baseline conditions. Besides diesel engine retrofits, other transit equipment may be eligible if it represents a major system-wide upgrade that will significantly improve speed or reliability of transit service, such as advanced signal and communications systems.

c. Fuel

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 considered diesel retrofit technologies by the EPA or CARB. See Section VII.D.3 for statutory exceptions for certain states regarding the purchase of alternative fuel with CMAQ funds.

d. Operating Assistance

Operating assistance to introduce new transit service or expand existing service is eligible. It may be a new type of service, service to a new geographic area, or an expansion of existing service providing additional hours of service or reduced headways. For a service expansion, only the operating costs of the new increment of service are eligible. Eligible operating costs include labor, fuel, maintenance, and related expenses. Operating assistance may be CMAQ-funded for a maximum of three years. The intent is to support the demonstration of new services that may prove successful enough to sustain with other funding sources, and to free up CMAQ funds to generate new air quality benefits.

e. Transit Fare Subsidies

CMAQ funds may be used to subsidize regular transit fares in an effort to prevent the NAAQS from being exceeded, but only under the following conditions: The reduced or free fare should be part of a comprehensive area-wide program to prevent the NAAQS from being exceeded. “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; it is not intended for the entire high-ozone season. Finally, 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 three-year limit.

6. Bicycle and Pedestrian Facilities and Programs

Bicycle and pedestrian facilities and programs are included as a TCM in section 108(f)(1)(A) of the CAA. The following are eligible projects:

- Constructing bicycle and pedestrian facilities (paths, bike racks, support facilities, etc.) that are not exclusively recreational and reduce vehicle trips
- Non-construction outreach related to safe bicycle use
- Establishing and funding State bicycle/pedestrian coordinator positions for promoting and facilitating nonmotorized transportation modes through public education, safety programs, etc. (Limited to one full-time position per State)\(^{37}\)

7. 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. Such projects can help ease congestion and reduce SOV use—contributing to mobility, while enhancing air quality and saving energy resources. Similar to ITS and Value Pricing, today’s 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 and associated emissions:

- Fringe parking
- Traveler information services
- Shuttle services
- Guaranteed ride home programs
- Market research and planning in support of TDM implementation
- Carpools, vanpools (see item 10 below)
- Traffic calming measures
- Parking pricing
- Variable road pricing
- Telecommuting
- Employer-based commuter choice programs

CMAQ funds may support capital expenses and up to three years of operating assistance to administer and manage new or expanded TDM programs.

\(^{37}\) 23 U.S.C. §217(d)
Marketing and outreach efforts to expand use of TDM measures may be funded indefinitely, but only if they are broken out as distinct line items (See Section VII.D.8. below).

Eligible telecommuting activities include planning, preparing technical and feasibility studies, and training. Construction of telecommuting centers and computer and office equipment purchases should not be supported with CMAQ funds.

8. Public Education and Outreach Activities

The goal of CMAQ-funded public education and outreach activities is to educate the public, community leaders, and potential project sponsors about connections among trip making and transportation mode choices, traffic congestion, and air quality. Public education and outreach can help communities reduce emissions and congestion by inducing drivers to change their transportation choices. More important, an informed public is likely to support larger regional measures necessary to reduce congestion and meet CAA requirements.

A wide range of public education and outreach activities is eligible for CMAQ funding, including activities that promote new or existing transportation services, developing messages and advertising materials (including market research, focus groups, and creative), placing messages and materials, evaluating message and material dissemination and public awareness, technical assistance, programs that promote the Tax Code provision related to commute benefits,38 transit “store” operations, and any other activities that help forward less-polluting transportation options.

Using CMAQ funds, communities have disseminated many transportation and air quality public education messages, including maintain your vehicle; curb SOV travel by trip chaining, telecommuting and using alternate modes; fuel properly; observe speed limits; don’t idle your vehicle for long durations; eliminate “jack-rabbit” starts and stops, and others.

The It All Adds Up to Cleaner Air public education messages and materials (regarding vehicle maintenance, proper fueling, trip chaining, and alternate modes) have been successful in raising awareness, garnering funds and in-kind support, and building coalitions of diverse groups across the country. These commercial-quality materials, which were developed in response to requests by State and local transportation and air agencies, are free and communities are encouraged to use and build on them. More information is available at http://www.italladdsup.gov/.

38 Section 132(f) of the Internal Revenue Code allows employers to pay their employees, as of November 5, 2007, up to $115 per month for transit and vanpool expenses and up to $215 per month for qualified parking. 26 U.S.C. §132(f). Each of these benefits is subject to annual increases based on changes to the Consumer Price Index. 26 U.S.C. §1(f)(3). Alternately, employers may allow employees to use their pre-tax income to purchase these commuter benefits. Employers may also provide a combination of these employer-paid and employee paid tax-free benefits. For more information, please visit http://www.commuterchoice.com/.
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.

9. Transportation Management Associations

Transportation Management Associations (TMAs) 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. TMAs can play a useful role in brokering transportation services to private employers.

CMAQ funds may be used to establish TMAs provided that they reduce emissions. Eligible expenses include TMA start-up costs and up to three years of operating assistance. Eligibility of specific TMA activities is addressed throughout this guidance.

10. 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).

a. 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. Marketing costs may be funded indefinitely.

b. Vanpool vehicle capital costs include purchasing or leasing vans for use in vanpools. Eligible operating costs, limited to three years, include empty-seat subsidies, maintenance, insurance, administration, and other related expenses.

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 should not be used to supplant that service.

Carpooling and vanpooling activities may be funded with up to 100% federal funding, with certain limitations.39

11. Freight/Intermodal

Projects and programs targeting freight capital costs—rolling stock or ground infrastructure—are eligible provided that air quality benefits can be demonstrated.40 Freight projects that reduce emissions fall generally into two categories: primary efforts that target emissions directly or secondary projects that reduce net emissions.

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39 23 U.S.C. §120(c)
40 23 U.S.C. §149(b)(3)
Successful primary projects could include new diesel engine technology or retrofits of vehicles or engines. Eligibility is not confined to highway projects, but also applies to nonroad mobile freight projects, such as rail. See Section VII.D.12. below on diesel retrofit technology—examples of primary freight projects—and for information on EPA’s guidance and model rule for emissions reduction credit in the SIP and conformity processes.

Secondary projects reduce emissions through shifts in or additions to infrastructure. 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 pre-1986 heavy-duty diesel trucks. This secondary, indirect effect on truck traffic and the ensuing drop in diesel emissions help demonstrate eligibility.

The transportation function of these freight/intermodal projects should be emphasized. Marginal projects that support freight operations in a very tangential manner are not eligible for CMAQ funding. Warehouse handling equipment, for example, is not an eligible investment of program funds. However, equipment that provides a transportation function or directly supports this function is eligible, such as railyard switch locomotives or shunters.

12. Diesel Engine Retrofits & Other Advanced Truck Technologies

The SAFETEA-LU places a new emphasis on diesel engine retrofits and the various types of projects that fall under this broad category. These efforts are defined as vehicle replacement, repowering (replacing an engine with a cleaner diesel engine, alternative fuels, etc.), rebuilding an engine, or other technologies determined by the EPA as appropriate for reducing emissions from diesel engines. This latter point, highlighting developing technologies, establishes a degree of flexibility and a need for periodic adjustment in the definition by the EPA. The legislation defines retrofit projects as applicable to both on-road motor vehicles and nonroad construction equipment; the latter must be used in Title 23 projects based in nonattainment or maintenance areas for either PM or ozone.

There are a number of project types in the diesel retrofit area for which CMAQ funds are eligible. Assuming all other CMAQ criteria are met, eligible projects include diesel engine replacement; full engine rebuilding and reconditioning; and purchase and installation of after-treatment hardware, including particulate matter traps and oxidation catalysts, and other technologies; and support for heavy-duty vehicle retirement programs. Project agreements involving replacements of either engine or full vehicle
should include a provision for disposal of the engine block and a process to verify the retirement of this equipment.\textsuperscript{45}

CMAQ funds may be used to purchase and install emission control equipment on school buses. (Such projects, generally, should be administered by FHWA; see VII.D.5, Transit Improvements, above.) In addition, although CMAQ funds should not be used for the initial purchase of airport parking lot shuttles, funds may be used for purchase and installation of after treatment hardware or repowering (with a hybrid drive train, for example).

Refueling is not eligible as a stand-alone project, but is eligible if it is required to support the installation of emissions control equipment, repowering, rebuilding, or other retrofits of non-road engines.\textsuperscript{46} For example, ultra-low sulfur diesel (ULSD) may be purchased as part of a project to install diesel particulate filters on nonroad construction equipment because these devices need ULSD to function properly. Costs associated with ULSD are eligible for CMAQ funding only until the standards are effective and the fuel becomes commonly available through the regional supply and logistics chain, effectively rendering ULSD the only remaining diesel fuel distributed. Eligible costs are limited to the difference between standard nonroad diesel fuel and ULSD.

In addition to equipment and technology, outreach activities that provide information exchange and technical assistance to diesel owners and operators on retrofit options are eligible investments. These projects could include the actual education and outreach program, construction or acquisition of appropriate buildings, and other efforts to promote the use of retrofit technologies. Please see Appendix 4 for more detail on diesel retrofits and the various strategies available in this developing air quality field.

The FHWA acknowledges that diesel retrofit projects may include nonroad mobile source endeavors, which traditionally have been outside the Federal-aid process. However, the SAFETEA-LU clarifies CMAQ eligibility for nonroad diesel retrofit projects.\textsuperscript{47} Areas that fund these projects are not required to take credit for the projects in the transportation conformity process. For areas that want to take credit, the EPA developed guidance for estimating diesel retrofit emission reductions and for applying the credit in the SIP and transportation conformity processes. The guidance can be found at http://www.epa.gov/otaq/stateresources/transconf/policy.htm#retrofit.

In addition to retrofit projects, upgrading long-haul heavy-duty diesel trucks with advanced technologies, such as idle reduction devices, cab and trailer aerodynamic fixtures, and single-wide or other efficient tires, has been demonstrated by the EPA’s \textit{Smart Way Transport Partnership Program} to reduce NO\textsubscript{x} emissions and save fuel. These strategies also are eligible for CMAQ support. Such projects funded directly by CMAQ that involve the private sector should be part of a Public-Private Partnership, as discussed in Section VII.C.

\textsuperscript{45}Reimbursement of costs for full-vehicle replacement may be limited to those elements that lead to emission reductions.

\textsuperscript{46} 23 U.S.C. §149(f) (SAFETEA-LU §1808(d))

\textsuperscript{47} 23 U.S.C. §149(b)(7) (SAFETEA-LU §1808(b))
13. 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 (The geographic requirement mainly applies to off-board projects, i.e. truck stop electrification (TSE) efforts). However, if CMAQ funding is used for an on-board project (i.e. 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.

There have been several instances where operating assistance funds have been requested for TSE services. CMAQ funding to date for TSE projects has been limited to capital costs (i.e. deployment of TSE infrastructure). Operating assistance for TSE projects should not be funded under the CMAQ program because TSE projects generate their own revenue stream and therefore should be able to cover all operating expenses from the accumulated revenue. See Section III.D for information on innovative financing opportunities available for these efforts.

The SAFETEA-LU also permits electrification or other idling reduction facilities and equipment to be constructed or located on rights-of-way of the Interstate system. Prior to the enactment of the SAFETEA-LU, this activity was prohibited. [NOTE: As mentioned earlier, the SAFETEA-LU Technical Corrections Bill removed the provision for facility construction in the Interstate ROW].

The EPA issued guidance in January 2004 on methods for calculating emissions reduction credits in SIPs and in the transportation conformity process for long-haul truck idle reduction projects. The guidance can be found at www.epa.gov/smartway/idlingimpacts.htm.

14. Training

The SAFETEA-LU provides that States and MPOs may use Federal-aid funds to support training and educational development for the transportation workforce. 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. Training funded with CMAQ dollars should be directly related to implementing air quality improvements and be approved in advance by the FHWA Division office.

15. Inspection/Maintenance (I/M) Programs

Funds under the CMAQ program may be used to establish either publicly or privately owned 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

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49 23 U.S.C. §111(d) (SAFETEA-LU §1412)
49 23 U.S.C. §504(e) (SAFETEA-LU §5204(e))
program must constitute new or additional efforts, existing funding (including inspection fees) should not be displaced, and operating expenses are eligible for three years.

**Privately Owned I/M Facilities**

In States that rely on privately owned I/M facilities, State or local I/M program-related administrative costs may be funded under the CMAQ program as in States that use public I/M facilities. However, CMAQ support to establish I/M facilities at privately owned stations, such as service stations that own the equipment and conduct emission test-and-repair services, requires a public-private partnership (See Section VII.C.).

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 EPA regulations.

16. Experimental Pilot Projects

State and local organizations have experimented with various types of transportation services to better meet the travel needs of their constituents. These "experimental" projects 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. These experimental pilots are not intended to bypass the definition of basic project eligibility but seek to better define the projects’ future role in strategies to reduce emissions.

For a project or program to qualify as an experimental pilot, it should be defined as a transportation project and be expected to reduce emissions by decreasing vehicle miles traveled (VMT), fuel consumption, congestion, or by other factors. The FHWA encourages States and MPOs to creatively address their air quality problems and to experiment with new services, innovative financing arrangements, public-private partnerships, and complementary approaches that use transportation strategies to reach clean air goals. The CMAQ program may be used to support a well-conceived project even if the proposal may not fully meet the eligibility criteria of this guidance.

Given the untried nature of these pilot 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 three years of implementation of the project or one year after the project’s completion, whichever is sooner.

**VIII. PROJECT SELECTION PROCESS-GENERAL CONDITIONS**

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50 23 U.S.C. §149(b)