

Draft Document for External Review--November 17, 2005

United States
Environmental Protection
Agency

Office of Transportation
and Air Quality

Publication Number
Date

**GUIDANCE FOR QUANTIFYING AND USING EMISSION REDUCTIONS
FROM MOBILE SOURCE RETROFIT PROJECTS IN STATE
IMPLEMENTATION PLANS AND
TRANSPORTATION AND GENERAL CONFORMITY**

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FROM MOBILE SOURCE RETROFIT PROJECTS IN
STATE IMPLEMENTATION PLANS AND
TRANSPORTATION AND GENERAL CONFORMITY**

**Transportation and Regional Programs Division
Certification and Compliance Division
Office of Transportation and Air Quality**

and

**Air Quality Strategies and Standards Division
Office of Air Quality Planning and Standards**

U.S. Environmental Protection Agency

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Guidance for Quantifying and Using Emission Reductions From Mobile Source Retrofit Projects in State Implementation Plans and Transportation and General Conformity

(Note: As used in this document, the terms “we”, “us” and “our” refer to EPA. The terms “you” and “your” refer to a state or local air pollution control agency or state or local transportation or other federal agency, as appropriate.)

CHAPTER 1

INTRODUCTION

1.1 What is the purpose of this guidance?

The purpose of this document is to provide you with guidance on quantifying and using emission reductions from highway and nonroad diesel vehicles and engines which have been retrofitted with emission reduction technology. This guidance document describes how to quantify and use reductions of nitrogen oxides (NO_x), hydrocarbons (HC), particulate matter (both PM_{2.5} and PM₁₀), and carbon monoxide (CO) in 8-hour ozone, PM_{2.5}, PM₁₀, and CO nonattainment and maintenance areas. You can use the emission reductions resulting from implementing a retrofit project for meeting requirements such as those necessary for an attainment or maintenance state implementation plan (SIP), a reasonable further progress (RFP) SIP, transportation conformity determinations (highway vehicles in most cases), and general conformity determinations (nonroad vehicles only).

EPA believes that retrofit projects provide a unique opportunity for state and local governments to reduce pollution from highway and nonroad diesel vehicle fleets, and as a result, assist in attaining the new 8-hour ozone and PM_{2.5} national ambient air quality standards (NAAQS or standards). In addition, on August 10, 2005, a new transportation bill was signed into law as SAFETEA-LU, or the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. SAFETEA-LU clarifies the funding eligibility requirements to provide further federal funding for retrofit projects through the Congestion Mitigation and Air Quality Improvement Program (CMAQ). In selecting CMAQ projects, Section 1808(b) - (d) of SAFETEA-LU calls on states and metropolitan planning organizations (MPOs) to give priority to cost-effective air quality projects, including diesel retrofit projects. The law also notes that States and MPOs continue to have final CMAQ project selection authority.

The SIP and conformity policy elements of this guidance in Chapters 1, 3, 4, and 5 are applicable to all states. However, the methodology that is described in Chapter 2 specifically targets states that use EPA’s MOBILE or NONROAD models. State and local agencies developing SIPs and conformity analyses for California should consult with EPA Region 9 for information on the current version of EMFAC approved for use in California and for information

on how to quantify emission reductions from credit retrofit projects.

1.2 How does this guidance relate to existing Clean Air Act requirements?

This document provides guidance to state and local air pollution control agencies, transportation agencies, and the general public on quantifying and using control measures to reduce highway and nonroad diesel vehicle and engine emissions in SIPs and transportation and general conformity determinations. SIP requirements can be found in Clean Air Act (CAA) sections 110(a)(2) and 172(c). Transportation and general conformity requirements can be found in CAA section 176(c). This guidance document does not substitute for those provisions, nor is it a regulation itself. Unless otherwise indicated, it does not impose binding, enforceable requirements on any party. Further, it does not assure that EPA will approve all instances of its application, and thus the guidance may not apply to a particular situation based upon the circumstances. The EPA and state decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate and consistent with the statute and applicable regulations. Any decisions by EPA regarding a particular SIP demonstration will only be made based on the statute and applicable regulations, and will only be made following notice and opportunity for public review and comment. Therefore, interested parties are free to raise questions and objections about the appropriateness of the application of this guidance to a particular situation.

Where specific recommendations are provided, you should consider whether or not such recommendations are appropriate for your particular project or situation. This guidance is a living document and may be revised periodically without public notice. EPA welcomes public comments on this document at any time and will consider those comments in any future revisions of this guidance document.

Readers of this document are cautioned not to regard statements recommending the use of certain procedures as either precluding other procedures or information or providing guarantees that using these procedures will result in actions that are fully approvable. As noted above, we cannot assure that actions based upon this guidance will be fully approvable in all instances, and all final SIP actions may only be taken following notice and opportunity for public comment.

1.3 What vehicles or engines does this guidance address?

This guidance focuses on emission reductions from highway and nonroad diesel vehicles and engines¹. New emission standards will affect all 2007 and future model year heavy-duty

¹ Highway sources include vehicles used on roads for transportation of passengers or freight. Nonroad sources include vehicles, engines, and equipment used for construction,

highway vehicles and engines. New emission standards (Tier 4) will phase in for 2008 and future model year nonroad engines. In general, this guidance applies to the retrofit of those vehicles and engines manufactured before those standards take effect and that will not have to comply with EPA's upcoming highway and nonroad regulations; thereby providing incentives, such as air quality credits, to retrofit those engines and vehicles. This guidance document can be used, however, for emission reductions from retrofits of post-2007 and post-2008 vehicles and engines if such activities meet the definition of "retrofit" discussed below.

1.4 What is a retrofit project?

For the purpose of this guidance only, a "retrofit project" is defined broadly to include any technology, device, fuel or system that achieves emission reductions beyond that currently required by EPA regulations at the time of its certification. Therefore, for those existing vehicles or engines that will not have to comply with EPA's upcoming 2007 and 2008 standards, any additional emission reduction improvement above the current regulation of these vehicle or engine emission levels is considered a retrofit project. Retrofit technologies may include, but are not limited to, the following:

agriculture, nonroad transportation, recreation, and many other purposes. Within these two broad categories, highway and nonroad sources are further distinguished by size, weight, use, and/or horsepower.

- EPA “verified” emission control technologies and fuels (for example, oxidation catalysts, particulate matter filters, emulsified fuels)²
- EPA certified engines³ as engine repowers or replacements
- California’s Air Resources Board (CARB) “verified” emission control technologies and fuels (see paragraph below)

² For a complete list of all EPA verified technologies, consult the list at the following web site: <http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm>.

³ For a complete list of all EPA certified large highway and nonroad engines, consult the list at the following web site: <http://www.epa.gov/otaq/certdata.htm>.

EPA signed a Memorandum of Agreement (MOA)⁴ with CARB to coordinate the verification of diesel retrofit technologies . This MOA establishes reciprocity in verifications of hardware or device-based retrofits, and further establishes our joint commitment to cooperate on the evaluation of retrofit technologies. This agreement commits EPA and CARB to work toward accepting particulate matter (PM) and NOx verification reduction levels assigned by the other's verification programs. Additionally, as retrofit manufacturers initiate and conduct in-use testing, both agencies agreed to coordinate this testing so data generated may satisfy the requirements of each program. This MOA is intended to expedite the verification and introduction into the market of innovative emission reduction technologies. Additionally, this MOA should reduce the effort needed for retrofit technology manufacturers to complete verification.

1.5 Can a state require retrofits of highway and nonroad vehicles or engines?

Under the CAA, no state but California may set its own emission standards for new highway motor vehicles and new motor vehicle engines, subject to receiving a waiver from EPA under CAA section 209(b). Other states may adopt California standards pursuant to the terms of CAA section 177. Because this is limited to new vehicles and engines, states are not specifically prohibited from requiring controls (such as retrofits) on vehicles and engines which are no longer new.⁵

Also, CAA section 209(d) states that nothing in the Act precludes any state from the right to control, regulate, or restrict the use, operation, or movement of registered or licensed motor vehicles.

No state, including California, can regulate new engines used in farm and construction equipment smaller than 175 horsepower or new locomotives or new engines used in locomotives. In addition, no state other than California, pursuant to a waiver from EPA, may set standards from nonroad spark-ignition engines smaller than 50 horsepower. California can also regulate certain new and non-new nonroad engines provided it first obtains a waiver of federal preemption from EPA under CAA section 209(e)(2). Other states may adopt California's new or non-new nonroad

⁴ MOA is at the following web site: <http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm>.

⁵ To some extent, states are able to set mandatory emission standards (such as retrofits) for in-use highway motor vehicles and engines. However, a District Court held in 1972 (see Allway Taxi, Inc. v. City of New York, 340 F. Supp.1120 (S.D.N.Y.), aff'd 468 F.2d 624 (2d. Cir. 1972)) that a state or locality is not free to impose its own emission control standards the moment after a new car is bought and registered. The court stated that such a measure would be an obvious circumvention of the Clean Air Act and would defeat the congressional purpose of preventing obstruction of interstate commerce. The court stated the preemption sections, however, do not preclude a state or locality from imposing its own exhaust emission standards upon the resale or re-registration of the automobile.

standards for which a waiver of preemption has been authorized by EPA, with the exception of the spark-ignition engines smaller than 50 horsepower.

Under EPA interpretation, California may apply for a waiver under section 209(e)(2) to establish mandatory retrofit projects for in-use nonroad engines and vehicles, and other states may adopt California's program if EPA has granted a waiver of preemption and the standards are identical. States are otherwise precluded from establishing their own mandatory retrofit requirements.

EPA believes that states are not precluded from regulating the use and operation of nonroad engines. The US Supreme Court in EMA v SCAQMD, 124 S.Ct 1756 (2004) held that requirements mandating the purchase of alternative-fueled vehicles on private operators amounted to emission standards for new motor vehicles and are preempted by CAA section 209(a). In the same decision the Supreme Court remanded to the U.S. District Court the question of whether governmental entities can set certain requirements for public fleets. The U.S. District Court subsequently ruled on a motion on May 5, 2005 that the fleet rules, as applied to state and local governments, fall within the market participation exemption to preemption, and thus are not preempted by section 209(a). To the extent the U.S. District Court decision is upheld it may allow the fleet rules to be applied to state and local governments (through the market participation - purchasing doctrine), and may possibly reach the issue of whether the fleet rules can be applied to private entities under public contract.

Regarding the general issue of the scope of federal preemption of state emission standards, EPA is also aware of several instances where political subdivisions have exercised their purchasing power or contracting authority to mandate the use of engines or vehicles that meet certain emission requirements for publicly funded projects.

1.6 What types of retrofit projects does this guidance address?

This document will address two types of retrofit projects: fleet specific and fleet wide projects. A fleet specific project has a specific number of vehicles/engines to be retrofitted about which detailed and precise information on vehicle/engine types, model years, and activity information is known. A fleet wide project refers to a retrofit effort based on more general mandates or goals which result in retrofits being applied to a wide range of vehicles or engines for which precise information about vehicle/engine types, model years, and activity is not known. Fleet Wide retrofits may arise from a state regulation (see Question 1.5) or voluntary program. Differences between fleet wide and fleet specific projects are discussed in more detailed in Question 2.4.1.

1.7 How does this guidance relate to the Voluntary Mobile Source Emission Reduction Program SIP guidance?

In October 1997, EPA issued its "Guidance on Incorporating Voluntary Mobile Source

Emission Reduction Programs in State Implementation Plans (SIPs)” (VMEPs).⁶ All voluntary retrofit projects should follow this guidance when being considered for the SIP. The purpose of the 1997 VMEP guidance is to support innovative methods in achieving emission reductions for SIPs. Under the guidance, the amount of emission reduction credits allowed for voluntary mobile emission reductions in a SIP is capped at three percent of the total projected future year emission reductions required to attain the applicable air quality standards. Today’s guidance relies on EPA’s existing VMEP guidance for voluntary retrofit projects, and interested parties should refer to that guidance for specific information on incorporating retrofit projects as a VMEP in the SIP.

1.8 Who should you contact for additional information?

If this guidance document does not answer a specific question, please contact the appropriate EPA regional office with responsibility for air quality planning and/or conformity in the area where the retrofit project is located. A contact list of your EPA Regional Office is available at the following web address: <http://www.epa.gov/epahome/locate2.htm>. In addition, contact information for EPA regional transportation conformity staff can be found at the following website: <http://www.epa.gov/otaq/transp/conform/contacts.htm>.

For general questions regarding retrofit programs or the application of verified retrofit technologies for the existing fleet of highway and nonroad vehicles, please contact Steve Albrink of EPA’s Office of Transportation and Air Quality at (202) 343-9671, albrink.steve@epa.gov.

For technical questions regarding the use of NMIM for calculating emission reductions from retrofit projects, please contact EPA’s Office of Transportation and Air Quality at mobile@epa.gov.

For general questions concerning the use of emission reductions from retrofit projects in SIPs or in transportation conformity, please contact Meg Patulski of EPA’s Office of Transportation and Air Quality at (734) 214-4842, patulski.meg@epa.gov.

For general questions concerning the use of emission reductions from nonroad retrofit projects in general conformity, please contact Tom Coda of EPA’s Office of Air Quality Planning and Standards at (919) 541-3037, coda.tom@epa.gov.

⁶ This policy is found at: <http://www.epa.gov/otaq/transp/traqvoldm.htm>.

CHAPTER 2

QUANTIFYING RETROFIT EMISSION REDUCTIONS

2.1 How do you quantify emission reductions from retrofit projects?

For states other than California, EPA recommends the use of the National Mobile Inventory Model (NMIM) to estimate emissions reductions from retrofit projects for SIPs and for conformity analyses. NMIM provides the most complete and accurate method available for estimating the impact of a retrofit project for highway or nonroad diesel vehicles or engines under local conditions. An explanation of what NMIM is, how it works, and why it is the best method for calculating emission reductions for retrofits is provided in Section 2.1. A discussion of the use of NMIM to generate emissions inventories for SIPs or conformity is provided in Section 2.2. A discussion of how to use NMIM to calculate emission reductions from retrofit projects in areas that are not using NMIM for general inventory preparation is provided in Section 2.3. A general discussion of NMIM inputs is provided in Section 2.4.

EPA is not providing guidance at this time for the quantification of emission reductions from retrofit projects in California.

2.2 What is NMIM and why should you use it to quantify emission reductions from retrofits?

Presently, MOBILE6.2 and NONROAD2005 cannot directly assess the emissions impacts of retrofit programs. However, EPA has recently added this capability to the National Mobile Inventory Model (current version - NMIM2005). NMIM is a graphical user interface that contains the MOBILE6.2 and NONROAD2005 models and a database of county-level input information, the National County Database (NCD) (note cautions about the use of the NCD in Section 2.2). NMIM2005 is capable of producing monthly inventories by source classification code (SCC) and county for every state except California. NMIM was created to simplify the process of developing county-by-county emission inventories for multi-county areas, states, or the entire nation. When using NMIM, users can simply select the year, months, and county or counties they wish to evaluate. Since NMIM includes county-level information, it will automatically create MOBILE6.2 input files, run MOBILE6.2, and multiply the emission factors by VMT to produce highway vehicle emission inventories for each county for each month.⁷ NMIM will also automatically create NONROAD2005 input files, run NONROAD2005, and produce nonroad equipment emission inventories for each county for each month. NMIM also provides a post-processing module that will aggregate the

⁷ “EPA’s National Mobile Inventory Model (NMIM), A Consolidated Emissions Modeling System for MOBILE6 and NONROAD”. H. Michaels, et al. U.S. EPA. <http://www.epa.gov/otaq/models/nmim/420r05003.pdf> .

months into an annual inventory and produce tab-delineated output that can be read into database or spreadsheet software applications.

The post-processors in NMIM include retrofit modules that allow you to specify the details of a retrofit program. These retrofit modeling modules take emission factors generated by MOBILE6.2 and NONROAD2005 and apply adjustments to those emission factors to reflect the specifics of the retrofit program as described in a user-generated input file. The resulting emission factors are used to generate emissions estimates for the retrofit project. For example, if the input file indicates that retrofits were done in 2005 to 1998 model year Class 7 trucks and you want to estimate the emissions of these trucks in 2010, NMIM will apply the appropriate adjustments to only the emissions of model year 1998 Class 7 trucks in 2010 when generating an emission estimate.

NMIM is a superior method for estimating emission reductions for retrofit projects compared to past spreadsheet-based tools because NMIM applies retrofit adjustments to emission factors that have been generated by MOBILE6.2 and NONROAD2005 under local conditions. The emissions of retrofit highway and nonroad vehicles and engines are subject to the same external factors as are the emissions for all other vehicles. These external factors include environmental factors (e.g., temperature, humidity), fleet characteristics (e.g., age distribution of fleet, distribution of VMT by vehicle class, number and types of nonroad engines or equipment), activity measures (e.g., speed distributions, distribution of VMT by roadway type, distribution of hours of operation for nonroad equipment), and fuel characteristics (e.g., sulfur content, RVP). The majority of impacts of these external factors on vehicles meeting past, current, and future emissions standards are incorporated in EPA's MOBILE6.2 and NONROAD2005 emissions models which are used to develop emissions inventories for SIPs and for regional conformity analyses. If the same inputs are used, NMIM will generate retrofit emission reductions based on the same conditions used to generate the rest of the inventory used in the SIP or conformity analysis.

While other approaches to estimating emission reductions from retrofit projects are possible, EPA believes it will be difficult to create an approach that is as thorough and consistent with the rest of the mobile source inventory as the NMIM method. If you want to develop your own approach, you should consult with your EPA Regional Office for approval. You must provide all relevant technical support documentation, including the assumptions and other relevant information used to calculate emission reductions and the approach must use the latest information as required by applicable requirements.

2.3 Can you use NMIM to create inventories for SIPs or conformity analyses?

Because NMIM incorporates MOBILE6.2 and NONROAD2005, it may be used to generate emissions inventories for SIPs and conformity analyses. The pre- and post-processors in NMIM may have advantages or disadvantages in various areas or applications compared to pre-existing methods. Therefore, before using NMIM, State and local air quality and transportation agencies should work together with EPA and DOT to determine whether NMIM is appropriate given local conditions and

modeling methods and to determine what modifications are needed to the NMIM database to accurately model local conditions.

The use of NMIM is not required for SIPs or regional conformity analyses. Some areas may choose not to use NMIM simply because it does not provide a significant resource advantage compared to pre- and post-processing methods already being used. In addition, the use of NMIM may not be appropriate to generate emissions inventories in all areas. For example, some areas may already be using more sophisticated methods for pre- and post-processing input and emissions data than NMIM can accommodate. In that case, state and local agencies should not use NMIM for inventory development, but should continue to use the more appropriate modeling already being conducted in the area.

States have provided information for the National County Database (NCD) as part of the National Emissions Inventory (NEI) development process. However, given the NEI cycle, this may not be the most recent or best available information at the time a state initiates modeling as required in the latest planning assumptions provisions of the conformity rules (40 CFR 93.110). For SIPs and regional conformity analyses, state and local agencies should review the information in the NCD to evaluate whether it includes the latest and best information currently available including latest planning assumptions where applicable. Where more current information is available, the database must be modified to incorporate the most recent data to meet regulatory latest planning assumptions requirements for SIPs and conformity. (EPA encourages states to separately submit updates to the NCD so that the most accurate database is available for both national and local inventory development). The NCD works at the county level and will need to be modified to account for areas containing partial counties, if necessary. The NCD also does not contain VMT estimates for future years, so any use of NMIM for a future evaluation year will have to include a projection of future VMT. The interagency consultation process should be used to evaluate whether the use of NMIM is appropriate in a given area, and to evaluate what changes are needed in the NMIM database for the area.

If you are using NMIM to develop inventories for SIPs or conformity, and have made certain that the appropriate local conditions have been entered in the NMIM database, entering the appropriate retrofit inputs as described below will ensure that retrofit reductions are incorporated in the inventory. If emission reductions from retrofits need to be calculated separately, you will have to run NMIM twice - a base case without the retrofit program and a control case with the retrofit program and with all other NMIM inputs unchanged. You would then calculate the difference between these two inventories to determine the emission reductions from the retrofit program.

2.4 Can you use NMIM to quantify emission reductions from retrofit programs even if you are not using it to generate the local inventory?

Yes, even if NMIM is not being used for inventory development, you can and should use it for the calculation of emission reductions for retrofits. When using NMIM solely to calculate emission

reductions from retrofits, you should first make sure that all NMIM inputs in the base case are as consistent as possible with the MOBILE6.2 and NONROAD2005 inputs being used to generate the inventory used in the SIP or conformity analysis. You should use those same inputs, along with those needed to describe the retrofit program, for the control case. Given that some differences in inputs and effects of pre- and post-processors may result in differences between emissions calculated using NMIM compared to other inventory methods, NMIM retrofit reductions should be calculated as a percentage reduction to the affected fleet, which can then be converted to mass reduction by multiplying by the emissions level for the affected fleet derived from the local inventory.

2.5 How do you use NMIM to quantify emission reductions from retrofit programs?

The details of how to use NMIM to estimate the emissions impact of retrofit programs are described in the NMIM User Guide (available at <http://www.epa.gov/otaq/nmim.htm>). This section of this guidance document summarizes some of the key inputs for NMIM and discusses some of the issues that users face when developing input data.

2.5.1 Differences between “fleet specific” and “fleet wide” retrofit programs

There are two types of retrofit projects that EPA expects to be implemented: "fleet specific" and "fleet wide". A "fleet specific" retrofit project refers to those projects which encompass a well defined group of vehicles or engines which are the targets for retrofit. A package delivery company implementing a retrofit program would be an example of a "fleet specific" project. A fleet specific project could include multiple model years, or multiple vehicle or equipment types. The key defining characteristic of a fleet specific program is that the actual number of vehicles or engines, as well as their type, model year, and activity is precisely known.

A "fleet wide" retrofit project refers to situations where there are general mandates or goals, but the actual individual vehicles or engines which will be retrofit are not known in advance. A state or local ordinance that requires a percentage of trucks in certain classes to be retrofit with a particular technology would be an example of a "fleet wide" project. In this case, the actual number of vehicles or engines, or their type, model year, or activity is not precisely known.

There are important differences between fleet specific and fleet wide projects that affect the kind of information that is needed to run NMIM. It is assumed that for fleet specific projects the precise number of vehicles or engines in each model year of each class that are to be retrofit will be known. In addition, it is assumed that the annual average mileage or hours accumulated by each model year of each class is also known.

Fleet wide projects are expected to have no precise information about the individual vehicles or engines which will be retrofit. In this case, the NMIM model assumes that the average mileage or hours accumulated by retrofit vehicles or engines is the same as for all vehicles or engines of that

model year and vehicle or engine class. Implementation is expressed as a fraction of all vehicles or engines of that model year and vehicle class. If the precise number of vehicles or engines which are retrofit is known, it must still be expressed as a fraction of all vehicles or engines of that model year and vehicle class or engine type in order to use the fleet wide calculation option.

As discussed in detail in the NMIM User Guide, the specifics of highway and off-road retrofit programs are described in separate input files called the “On-Road Retrofit Parameters File” and the “Off Road Retrofit Parameters File”. These files are used for both fleet specific and fleet wide retrofit projects. For highway and off-road fleet specific projects, additional input files called the “On-Road Fleet Information Parameters File” and the “Off-Road Fleet Information Parameters File” are required. These files describe in detail the specific fleets affected by the retrofit program.

2.5.2 The retrofit parameters

The files for on-road and off-road retrofit parameters describe the details of the retrofit program. These include inputs that specify the pollutants affected by the retrofit program, the vehicle or engine types affected, the calendar years during which the retrofits occur, the model years of the vehicles or engines that will be retrofit, the percentage of the fleet retrofit per year, and the percentage effectiveness of the retrofit technology applied to the vehicles or engines. Details on the use of these inputs are described in the NMIM User Guide. Specific guidance on these inputs where applicable is given below.

2.5.2.1 Pollutants affected by the retrofit program

While NMIM allows you to enter the entire range of pollutants that MOBILE6.2 and NONROAD2005 provide emissions estimates for, this guidance currently applies only to NO_x, HC, CO, PM₁₀, and PM_{2.5} emissions. Therefore, these are the only inputs that should be used when evaluating the emissions reductions of retrofit programs for emissions reduction credit under this guidance. As discussed in Section 2.4.2.3 below, all pollutants affected by the retrofit program, including any that increase as a result of the retrofit technology, should be evaluated for SIP or conformity purposes.

2.5.2.2 Vehicle or engine types affected

As discussed in Section 1.3 above, this guidance document only addresses retrofit projects for diesel highway vehicles and off-road engines and equipment. NMIM allows you to enter the full range of vehicle and engine types included in MOBILE6.2 and NONROAD2005, but only inputs for diesel vehicles or engines should be used for retrofit emissions reduction credit under this guidance.

2.5.2.3 Percentage effectiveness of the Retrofit

This input is used to describe the effectiveness of the particular vehicle or engine retrofit technologies being used in the retrofit project. As mentioned in Section 1.4 above, EPA has verified the emission reductions for certain retrofit technologies. A list of these EPA-verified retrofit

technologies and the emission reductions associated with them can be found at <http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm>. This web site also includes a link to retrofit technologies that have been verified by the California Air Resources Board. You should use retrofit reductions from these verified retrofit technology lists as inputs for NMIM.

Some verified retrofit technologies may result in emission reductions for one pollutant and emission increases for another. Any analysis of retrofit projects for SIPs or conformity purposes should include all pollutants affected by the retrofit project, including any that increase as a result of the retrofit technology used.

2.5.3 The fleet information parameters

The files for on-road and off-road fleet information are used to provide details of specific fleets of vehicles or engines for which more detailed information is known. Use these files, along with the retrofit parameter files described above, when quantifying the emission reductions from fleet specific retrofit projects. For highway vehicles, this file includes inputs for vehicle class, model year, number of vehicles, and annual VMT per vehicle. For off-road vehicles, this file includes three inputs needed to specify the engines in the project – source category classification (SCC) code, horsepower bin, and technology type – as well as model year, number of engines, activity in hours per year, and monthly activity allocation.

Details on the use of these inputs are described in the NMIM User Guide. Specific guidance on these inputs where applicable is given below. If you are modeling a Fleet Specific project, you should be able to enter detailed information for all of these inputs. Note that these files only describe characteristics of a fleet of vehicles or engines; they do not describe any details of a retrofit project. When quantifying the reductions for a fleet specific retrofit project, the fleet information parameters files are used to describe the specific fleet, while the retrofit parameter files are used to describe the retrofit program applied to that fleet. When used without retrofit parameter files, the fleet information files can be used to simply quantify the emissions for any specific fleet of vehicles or engines.

2.5.3.1 Vehicle class or specific engine parameters

Because this function can be used to quantify the emissions from any specific fleet of vehicles or engines, there is no restriction on the types of vehicles or engines that can be entered here. However, retrofit benefits will only be applied to those vehicles or engines specified in the retrofit parameters file, which, as described above, should only include diesel vehicles and engines under this guidance.

2.5.3.2 Number of vehicles or engines

The number of vehicles or engines entered for the specific fleet should be based on the calendar year for which emission estimates are being calculated. When estimating emissions for a

specific fleet in the current year, this is the current size of the fleet. However, in future years the fleet of affected vehicles or engines may become smaller as some vehicles or engines in the fleet are scrapped while other newer, non-retrofit vehicles may be added to the fleet. MOBILE6.2 and NONROAD2005 include the effects of scrappage when projecting future emissions for the entire fleet (e.g., both models assume that the number of 1998 model year vehicles or engines decreases in each future year) . However, these effects are not applied to the number of vehicles or engines entered in the fleet information file for a specific fleet (e.g., if your input file indicates that you have 20 1998 model year vehicles or engines in your retrofit fleet in 2005, NMIM will assume 20 1998 model year vehicles or engines in any future year that you model). If you have reason to believe that some of the vehicles currently in the specific fleet may no longer be in the fleet by the calendar year that is being evaluated, reduce the input for number of vehicles or engines appropriately.

2.5.3.3 **VMT or hours of use**

The activity level (VMT or hours of use) entered for the specific fleet should be based on the activity that actually occurs within the nonattainment or maintenance area that the SIP or conformity analysis applies to. For example, in the case of a retrofit project applied to fleet of long-haul trucks, you must not include VMT that occurs outside the nonattainment or maintenance area.

The activity level (VMT or hours of use) entered for the specific fleet should be based on the calendar year for which emission estimates are being calculated. When estimating emissions for a specific fleet in a current year, this is the current activity level of the fleet. However, in future years, the activity level of the affected vehicles or engines in the fleet may change as older vehicles and engines are often used less than newer ones. MOBILE6.2 includes the effects of decreased activity with age when projecting future emissions for the entire fleet (e.g., MOBILE6.2 assumes that the activity of 1998 model year vehicles or engines decreases in each future year). However, these effects are not applied to the activity levels entered in the fleet information file for a specific fleet (e.g., if your input file indicates that 1998 model year vehicles are driven 100,000 miles in 2005, NMIM will assume that 1998 model year vehicles are driven 100,000 miles in any future year that you model). If you have reason to believe that activity levels of vehicles or engines currently in the specific fleet may be lower by the calendar year that is being evaluated, this lowered activity should be accounted for by reducing the input for VMT or hours of use appropriately.

CHAPTER 3

USING EMISSION REDUCTIONS IN SIPS

3.1 What are the basic requirements for using emission reductions in SIPS?

In order to be approved as a control measure which provides additional emission reductions in a SIP, a retrofit project cannot interfere with other requirements of the CAA, and would need to be consistent with SIP attainment, maintenance, or RFP requirements, as applicable. The retrofit project must provide emission reductions that meet the basic SIP requirements described below. You will notice information under both “SIP Requirement” and “Specific Recommendations” headings. The “SIP Requirement” heading refers to requirements under CAA section 110 concerning SIPs that are mandatory. The “Specific Recommendations” headings include our recommendations for implementing a retrofit project. While these recommendations are not binding, they may provide appropriate safeguards and considerations for a successful retrofit project.

3.1.1. Quantifiable -

SIP Requirement: The emission reductions from a retrofit project are quantifiable if they are measured in a reliable manner and can be replicated. Emission reductions must be calculated for the time period for which the reductions will be used.

Specific Recommendations:

(A) In general, if you are retrofitting certified vehicles/engines with verified emission control technologies or certified engines, quantifying the emission reductions is fairly straightforward. Issues may arise when dealing with pre-certified engines and/or non-verified technologies. In these circumstances, you will need to document the emission reductions by providing all relevant data to EPA for review.

(B) Chapter 2 of this document provides you with a recommended method for quantifying emission reductions. You can use this methodology or you can submit your own methodology. If you submit your own, we will review it and make a decision as to the appropriateness of its use on a case-by-case basis.

3.1.2 Surplus -

SIP Requirement: Emissions reductions are considered “surplus” if they are not otherwise relied on to meet other applicable air quality attainment or maintenance requirements (i.e., no double-counting of emission reductions). In the event that the retrofit project is used to meet such air quality related program requirements, they are no longer surplus and may not be used for additional credit. Emissions from the vehicles to be retrofitted must be in the applicable mobile source emissions inventory before credit is taken in a SIP.

3.1.3 Federally Enforceable -

SIP Requirement: Credited retrofit control measures must be enforceable. Depending on how the emission reductions are to be used, control measures must be enforceable through a SIP or SIP revision. Where the emission reductions are part of a rule or regulation for SIP purposes, they are considered federally enforceable if they meet all of the following requirements:

- They are independently verifiable.
- Violations are defined, as appropriate.
- You and EPA have the ability to enforce the measure if violations occur.
- Those liable for violations can be identified.
- Citizens have access to all the emissions-related information obtained from the responsible party.
- Citizens can file suits against the responsible party for violations.
- Violations are practicably enforceable in accordance with EPA guidance on practicable enforceability.
- A complete schedule to implement and enforce the measure has been adopted by the implementing agency or agencies.

The specific requirements for enforceability vary when submitting a SIP retrofit project as a mandatory or voluntary measure. If your retrofit project is mandatory, then there is no limit on the amount of emission reductions that can be claimed as long as such reductions are supported and meet standard SIP enforceability requirements for mandatory measures. If your retrofit control measure is approved under EPA's VMEP guidance, the state is responsible for assuring that the reductions credited in the SIP occur. The state would need to make an enforceable SIP commitment to monitor, assess and report on the emission reductions resulting from the voluntary measure and to remedy any shortfalls from forecasted emission reductions in a timely manner. Further, the total of all voluntary measures (including retrofit measures) may not exceed three percent of the total reductions needed to meet any requirements for reasonable further progress, attainment or maintenance. In the circumstance where the actual emission reductions achieved are more than the amount estimated in the SIP, you may take credit for the additional emission reductions provided it does not exceed the three percent cap on voluntary measures and meets the other requirements of the VMEP guidance. If you wish to have a SIP revision approved under the VMEP guidance consult that policy for further information.

3.1.4 Permanent -

SIP Requirement: The emission reduction produced by the retrofit control measure must be permanent throughout the time period that the reduction is used in the applicable SIP.

Specific Recommendations:

(A) Full emission reductions can be credited from retrofit vehicles that operate exclusively within the nonattainment or maintenance area. Vehicles that typically operate within a captive area may include, but are not limited to, the following:

- School buses
- Transit buses
- Waste haulers
- State/local government owned vehicles and engines (e.g., department of transportation)
- Nonroad construction and agricultural vehicles/engines

Some fleets may travel only partially in the nonattainment or maintenance area. Such fleets may be considered as part of a retrofit project, but the emission reductions claimed are limited to the travel (and the associated emission reductions) that are expected to occur from such vehicles within the nonattainment or maintenance area.

(B) EPA and ARB provide information on the durability of the verified retrofit technology which allows you to determine the length of time the technology may perform at its verified emission reduction capability. Consequently, you should select retrofit technologies that are verified or certified by EPA, or California's Air Resources Board. For a list of verified technologies, see <http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm>.

(C) For regulatory or voluntary retrofit control measures, you should demonstrate that the retrofit vehicles or engines remain in use within the nonattainment or maintenance area for their useful life.

3.1.5 Adequately Supported -

SIP Requirement: The state must demonstrate that it has adequate funding, personnel, and other resources to implement the retrofit control measure on schedule.

Specific Recommendations:

(A) The state should ensure it has allocated appropriate funds from a reliable funding source.

(B) The state should ensure that the retrofit fleet operators correctly install, operate, and maintain the retrofit technology according to the manufacturer's recommendations.

Example: The city transit fleet has 50 buses retrofitted with PM filters. The state should

ensure that the fleet operators are properly trained to operate, maintain, and detect problems with the PM filters and that ultra-low sulfur diesel is used by all buses with filters installed.

(C) The state should assess and verify the status of the retrofit vehicles and/or engines and the associated emission reductions, as applicable.

3.2 How can the estimated emission reductions be used for SIP purposes?

For your reasonable further progress, attainment or maintenance SIP strategy, you can use emission reductions which are expected to be generated from the retrofit control measure by applying the following criteria:

(A) Emission reductions would be calculated on an annual basis in tons per year or tons per pollutant season as required in the SIP process for a given pollutant and standard. For example, NO_x reductions from retrofit projects would be calculated in an 8-hour ozone SIP for tons reduced per day for a typical summer day. In contrast, PM_{2.5} or other reductions would be calculated on a tons per year basis for SIP inventories for the annual PM_{2.5} standard. Such calculations would consider factors that may affect emission reductions and their surplus status over time, including changing patterns of operations or use, vehicle deterioration factors, equipment useful life, and government emission standards.

(B) Emission reductions would be commensurate with the level of travel and associated reductions from retrofitted vehicles within a given nonattainment or maintenance area. For example, if retrofitted vehicles are operated exclusively within the nonattainment or maintenance area, the associated reductions from retrofit technology would also be assumed to occur within such an area. However, some fleets may leave the nonattainment or maintenance area for some portion of their operation. Such fleets may be considered as part of a retrofit project, but the emission reductions claimed are limited to the travel (and the associated emission reductions) that are expected to occur from such vehicles within the nonattainment or maintenance area.

3.3 What would a state submit to EPA to meet the requirements for incorporating a retrofit control measure in a SIP?

You would submit to EPA a written document which:

(A) Identifies and describes the retrofit measure and its implementation schedule to reduce emissions within a specific time period;

(B) Contains estimates of emission reductions attributable to the measure, including the methodology and other technical support documentation used for your estimates. You can follow the methodology provided in Chapter 2 of this document or you can submit your own. If you submit your own methodology for quantifying the emission reductions, you must also provide all relevant

technical support documentation, including the assumptions and other relevant information used to calculate emission reductions. You must rely on the most recent information available at the time the SIP is developed;

(C) Either contains federally enforceable requirements for you to implement, track, and monitor the measure; or if the measure is developed under the VMEP guidance, the state enforceably commits to evaluate and report the resulting emission reductions;

(D) If the measure is developed under the VMEP guidance, the state enforceably commits to remedy any SIP emission shortfall in a timely manner if the measure does not achieve estimated emission reductions; and

(E) Meets all other requirements for SIP revisions under CAA sections 110 and 172.

CHAPTER 4

Using Emission Reductions in Transportation and General Conformity Determinations

4.1 What is transportation conformity, and what kinds of retrofit projects can be credited in transportation conformity determinations?

Transportation conformity is required under Clean Air Act section 176(c) (42 U.S.C. 7506(c)) to ensure that federally supported highway and transit project activities are consistent with (“conform to”) the purpose of the SIP. Conformity to the purpose of the SIP means that transportation activities will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant national ambient air quality standards (NAAQS or “standards”). EPA’s transportation conformity rule (40 CFR parts 51 and 93) establishes the criteria and procedures for determining whether transportation plans, transportation improvement programs (TIPs) or projects conform to the SIP. Transportation conformity applies to areas that are designated nonattainment, and those redesignated to attainment after 1990 (“maintenance areas” with plans developed under Clean Air Act section 175A) for transportation-related criteria pollutants, including 8-hour ozone, PM_{2.5}, and PM₁₀, nonattainment and maintenance areas that could benefit from NO_x and PM reductions from retrofit projects.

In urban areas, transportation planning and conformity determinations are the responsibility of the metropolitan planning organization (MPO). MPOs are responsible for updating and revising the transportation plan and TIP on a periodic basis, as well as transportation plan and TIP conformity determinations. A determination includes a regional emissions analysis that shows that the emissions expected from the area’s planned transportation system do not exceed the motor vehicle emissions target (“budgets”) set by the SIP for meeting reasonable further progress, attainment, or maintenance requirements. In cases where an area does not yet have a SIP in place, a different type of emissions test is used for transportation plan and TIP conformity determinations. After an MPO’s conformity determination, the U.S. Department of Transportation (DOT) must also determine conformity of the transportation plan and/or TIP. The interagency consultation process is required to be used when developing transportation plans, TIPs, plan and TIP conformity determinations, and SIPs, and the process includes MPOs, state departments of transportation, public transit agencies, state and local air quality agencies, EPA, and DOT (40 CFR 93.105).

MPOs may use emissions reductions from highway vehicle retrofit projects in transportation conformity determinations, since transportation conformity includes emissions and reductions from on-road mobile sources. Nonroad mobile source emissions and control programs, including the emissions and reductions from nonroad retrofitted vehicles, are included in the nonroad mobile source inventory of the SIP. When appropriate and desired, the transportation conformity regulation provides options for crediting reductions from nonroad retrofit projects, such as retrofitted highway construction equipment. See Question 4.3 below for further information on options for crediting nonroad retrofit projects in transportation conformity determinations.

4.2 How can the emission reductions from *highway retrofit projects* be included in transportation conformity determinations?

The transportation conformity rule describes the specific requirements for including emission reductions from highway retrofit projects in a transportation conformity determination. If credit is obtained for a retrofit project in the SIP's motor vehicle emissions budget, this does not preclude it from also being used towards the transportation conformity determination.

To credit retrofit projects in a regional emissions analysis, the appropriate jurisdictions must be committed to the measure. The appropriate level of commitment varies according to the requirements outlined in 40 CFR 93.122(a) which are described as follows:

- If the retrofit project does not require a regulatory action to be implemented and it is included in the transportation plan and TIP with sufficient funding and other resources for its full implementation, it can be included in a transportation conformity determination.
- If the retrofit project requires a regulatory action to be implemented, it can be included in a conformity determination if one of the following has occurred:
 - ▶ The regulatory action for the retrofit project is already adopted by the enforcing jurisdiction (e.g., a state has adopted a rule to require such a project);
 - ▶ The retrofit project has been included in an approved SIP; or
 - ▶ There is a written commitment to implement the retrofit project in a submitted SIP with a motor vehicle emissions budget that EPA has found adequate.⁸

If the retrofit project is not included in the transportation plan and TIP or the SIP, and it does not require a regulatory action to be implemented, then it can be included in the transportation conformity determination's regional emissions analysis if the determination contains a written commitment from the appropriate entities to implement the retrofit project.

Whatever the case, any emission reductions can only be applied in a transportation conformity determination for the time period or years in which the retrofit project will be implemented. Written commitments must come from the agency with the authority to implement the retrofit project. The latest emissions model and planning assumptions must also be used when calculating emissions reductions, according to 40 CFR 93.110 and 93.111.

You would utilize the interagency consultation process required by 40 CFR 93.105 to discuss the methods and assumptions used to quantify the reductions from the retrofit project. Chapter 2 of

⁸Section 93.118 of the transportation conformity rule describes the process and criteria that EPA considers when determining whether submitted SIP budgets are appropriate for transportation conformity purposes prior to EPA's SIP approval action.

this document provides you with a method for quantifying emission reductions.

4.3 How can the emission reductions from *nonroad retrofit projects* be included in transportation conformity determinations?

There are two options that may be used to reflect reductions from nonroad retrofit projects in transportation conformity determinations. The two options are:

- apply nonroad retrofit emission reductions (as a "safety margin") to the on-road motor vehicle emissions budgets through a SIP revision; or
- establish a trading mechanism in the SIP to allow emissions to be traded from one emissions sector to another.

Both of these options are provided by the current transportation conformity rule and are completed through the SIP process with consultation among federal, state, and local air quality and transportation agencies. An area may decide to pursue one of these options if it is anticipated that emission reductions from nonroad retrofit projects may be needed to assure future transportation conformity determinations.

These options are supported by section 93.124(b) of the transportation conformity rule, which states:

“A conformity determination shall not trade emissions among budgets which the applicable implementation plan (or implementation plan submission) allocates for different pollutants or precursors, or among budgets allocated to motor vehicles and other sources, unless the implementation plan establishes appropriate mechanisms for such trades.”

In the preamble of the original 1993 transportation conformity rule we stated that "[t]he state may choose to revise its SIP emissions budgets in order to reallocate emissions among sources or among pollutants and precursors. For example, if the SIP is revised to provide for greater control of stationary source emissions, the State may choose to increase the motor vehicle emissions budget to allow corresponding growth in motor vehicle emissions (provided the resulting total emissions are still adequate to provide for attainment/maintenance of the NAAQS." EPA believes that this preamble and 40 CFR 93.124(b) clearly allow trading programs to be established to ensure future transportation conformity determinations, when desired.

The following paragraphs provide details for crediting nonroad retrofit projects, regardless of funding source, in the transportation conformity process. Nonroad retrofit projects that are reflected in a transportation conformity determination under either option must meet the conformity rule requirements articulated in Question 4.2, in addition to any other requirements described below.

Applying Credit Through a Safety Margin

Some areas may have a “safety margin” in their SIP. Section 93.101 of the transportation conformity rule defines a “safety margin” as “the amount by which the total projected emissions from all sources of a given pollutant are less than the total emissions that would satisfy the applicable requirement for reasonable further progress, attainment, or maintenance.” Safety margins are calculated for a specific year in the SIP for which a budget is established (e.g., the 10th year of a maintenance plan, etc.). Examples of areas that may have safety margins are maintenance areas and 8-hour ozone and PM_{2.5} nonattainment areas with less severe air quality problems. Several nonattainment areas have already established safety margins through the SIP process to assist in making future transportation conformity determinations.

In order for EPA to approve the allocation of a safety margin to the motor vehicle emissions budgets, the following SIP and transportation conformity requirements would have to be met:

- The entire SIP must continue to demonstrate its Clean Air Act purpose, pursuant to the statute and 40 CFR 93.124(a). Before the emissions level of a motor vehicle emissions budget is increased, the state air agency would need to determine that there is a safety margin, including any net air quality benefit from any nonroad retrofit projects and ensure that emissions inventories of on-road, nonroad and other sources are consistent with the SIP’s demonstration.
- The calculation for the nonroad retrofit projects and any safety margin would be based on the latest information and models available at the time the SIP is developed. The rigor in calculating a safety margin may vary depending upon whether new air quality modeling is performed or if a less rigorous demonstration is adequate (e.g., maintenance areas that are establishing a safety margin based on staying below a previous year of clean monitoring data).
- The SIP revision must clearly allocate the safety margin to the motor vehicle emissions budget(s) for use in transportation conformity determinations, pursuant to 40 CFR 93.124(a);
- Nonroad retrofit projects reflected in a safety margin must be assured and enforceable, have adequate funding and resource commitments, and be on schedule; and
- Meet any other applicable SIP statutory and regulatory requirements.

See Chapter 3 for more information about including a retrofit project in a SIP.

EPA notes that the allocation of a safety margin to the on-road transportation sector could impact an area’s ability to allow future growth in emissions from other source sectors (e.g., stationary sources). State and local transportation and air quality agencies and other affected parties should always consult on whether a safety margin is appropriate for transportation conformity in a given area.

Establishing a Trading Mechanism in the SIP

State and local agencies can also establish a more fluid process through the SIP to trade emissions among the motor vehicle emissions budgets and emission inventories of other source

sectors. Section 93.124(b) and EPA's Economic Incentive Program (EIP) guidance⁹ discuss trading in transportation conformity among different sources. The primary concerns articulated in that guidance are: 1) to ensure that credits are only taken in transportation conformity if they are truly reductions to overall air quality (i.e., are not offset by emissions increases in other emissions sources); and 2) to ensure that double-counting does not occur among source categories in the SIP or in transportation conformity. Emissions reductions that are to be used in trading programs must be consistent with the EIP guidance, and the other criteria listed below. SIP revisions must be approved by EPA before trading programs can be utilized for transportation conformity determinations.

In order for EPA to approve a trading program, the following SIP and transportation conformity requirements would have to met:

- The entire SIP must continue to demonstrate its Clean Air Act purpose when trades are allowed, pursuant to the statute and 40 CFR 93.124(a). When the trading program is developed, the state air agency would need to ensure that there would be a net air quality benefit from any nonroad retrofit project reductions that would be traded, while ensuring that emissions inventories from all sources continue to be consistent with the SIP's demonstration.
- A state regulation must be developed that describes in adequate detail the scope and process for making trades so that the trading program can be implemented as intended. Such a regulation would also provide that all trades become enforceable through the trading mechanism approved into the SIP in the event that reductions are not otherwise enforceable;
- Trades must be based on nonroad retrofit projects that result in a net emission reduction, which must consider the emissions produced by the vehicles and the impact of any retrofit technology. Individual trades cannot exceed the net air quality benefits of a retrofit project;
- The trading program should ensure that individual trades must only be made when net air quality benefits exist (i.e., cannot result in "double-counting" in reductions already accounted for in the SIP, conformity, NSR offsets, etc.;
- Reductions can only be taken for conformity analysis years where reductions are achieved;
- Control programs that produce reductions must be assured and enforceable, have adequate funding and resource commitments, and be on schedule;
- The public is provided an opportunity to comment on trades that occur under the trading

⁹EPA's January 2001 guidance entitled, "Improving Air Quality with Economic Incentive Programs," provides additional information on developing and implementing economic incentive based control strategies. This guidance is available at: <http://www.epa.gov/ttn/oarpg/tl/memoranda/eipfin.pdf>. See Appendix 16.10 for further information regarding the transportation conformity requirements that need to be met by an EIP trading program.

program; and,

- Meet any other applicable SIP requirements.

See Chapter 3 for more information about including a nonroad retrofit project in a SIP.

EPA consultation

State and local agencies are strongly encouraged to consult early with their respective EPA Regional Office if they are considering applying a safety margin or developing a trading program in the SIP for transportation conformity purposes. EPA is available to provide such technical assistance so that SIP revisions can be processed efficiently. See Chapter 1 for more information regarding EPA regional transportation contact information.

4.3 How can the estimated emission reductions be used for general conformity determinations?

General conformity applies in nonattainment and maintenance areas to all federal actions or activities not covered by the transportation conformity program, such as military base expansions or approval of airport expansion projects. The general conformity regulation (40 CFR 51.850-860 and 93.150-160) prohibits federal agencies from taking, or supporting in any way, actions in areas that are designated nonattainment or maintenance for any criteria pollutant that interferes with attainment or maintenance of the NAAQS as planned for in the SIP. The general conformity regulation applies to the total foreseeable direct and indirect emissions increases from the action or activity including both construction and operational emissions. Indirect emissions can include vehicles servicing a federal facility or activities supported by federal funds.

To reduce the regulatory burden on insignificant actions, the regulation establishes a number of exemptions for categories of actions or activities known to have insignificant emissions increases or whose emissions fall below certain *de minimis* levels. The general conformity rule establishes *de minimis* emission levels based on the severity of the nonattainment problem. If the net increase in total direct and indirect emissions from a federal action is below the *de minimis* levels, the federal agency does not have to make a conformity determination for the action. The general conformity rule also exempts federal actions such as routine recurring transportation of material and personnel and maintenance dredging and debris disposal where no new deepening occurs. See section 93.153 of the general conformity rule for further details.

If the net increase in emissions is above the *de minimis* levels and the project is not otherwise exempt, the federal agency must determine that the action or activity will conform with the SIP. Since the general conformity regulation applies to a wide variety of actions or activities, the rule provides a number of methods for reducing emissions which can be used to demonstrate conformity. Two methods, mitigation and offsetting of emission increases, require emission reductions from sources which may or may not be directly connected to the federal action or activity.

4.4 How are retrofit projects addressed by the general conformity regulation?

A voluntary retrofit project would be expected to retrofit an existing fleet of vehicles that are not considered in transportation conformity determinations. Since such a retrofit project would not be increasing emissions, the implementation of a retrofit project would not be subject to general conformity requirements. However, credit generated by diesel retrofit programs could be used in a number of ways in general conformity determinations, such as:

- Retrofit of diesel engines could be used to mitigate or offset emission increases caused by a federal action. For example, the retrofitting of diesel airplane tugs at a military air station could be used to mitigate a portion of the emission increases associated with an expansion project at the military base or the retrofitting of package delivery vehicles could be used to offset the emission increases caused by a base expansion.
- [Illegible text]
- [Illegible text]

4.5 What requirements would potentially limit the use of retrofit projects in the general conformity program?

Emission reductions used as part of the (1) project design, (2) mitigation measures, (3) offset, or (4) for credit for future conformity determinations, must be surplus, permanent, quantifiable and enforceable as described in the general conformity rule and Chapter 3 of this document and must be reviewed by EPA, state, tribes and local air quality agencies and the public as part of the review of the general conformity determination. In addition, general conformity regulations also require mitigation measures to meet a number of requirements. In order for a retrofit project to be acceptable as a mitigation measure, it would have to meet the following:

- The retrofit project must be identified and the process for implementation and enforcement must be explicitly described.
- Prior to determining conformity, the federal agency making the determination must obtain written commitments from the appropriate entities (e.g., fleet operator, state or city official, private company official or MPO) to implement the retrofit project as a mitigation measure.
- The reductions from the retrofit program must be contemporaneous with the project emission increases, specifically, the reductions must occur in the same calendar year as the increases.
- The implementing entity/official responsible for implementing the retrofit project and any persons or agencies voluntarily committing to mitigation measures must comply with the obligations of such commitments.
- If the federal action involves licensing, permitting or approving an action of another governmental or private entity, the federal agency must condition its approval action on the other entity meeting all mitigation commitments.
- If the retrofit project is modified resulting in an increase in emissions, the new mitigation measures must continue to support the initial general conformity determination and must undergo public review.

EPA consultation:

State and local agencies are strongly encouraged to consult early with their respective EPA Regional Office if they are considering applying a nonroad retrofit project in a general conformity determination. See Chapter 1 for more information regarding EPA regional transportation contact information.

CHAPTER 5

Monitoring and Penalties

5.1 **What monitoring and record keeping should occur to document retrofit emission reductions?**

5.1.1 What should you monitor and record?

For each retrofitted vehicle or engine generating emission reductions, as applicable, you or another responsible party should monitor and record the following information, where applicable, for each time period for which an emission reduction is generated:

- Actual use and operation of the retrofit vehicles/engines and retrofit technology
- Actual use of any required fuel (e.g., ultra-low sulfur diesel fuel)
- Proper installation of retrofit technology at project initiation
- Proper training of vehicle operators and technicians at project initiation
- Maintaining surplus account of emission reductions (discounting credits when new regulations become effective)

5.1.2 How long should you maintain records?

All information to be monitored and recorded in accordance with this guidance for existing SIP requirements should be maintained by you or another responsible party for a period of no less than five years, or longer where appropriate.

5.2 **What validation and reconciliation should occur for emission reductions in SIPs approved under the VMEP Policy?**

The SIP submission for a voluntary measure should contain a description of the evaluation procedures and time frame(s) in which the evaluation of SIP reductions will take place. Once the voluntary control measure is in place, emission reductions should be evaluated by you as required to validate the actual emission reductions. You should submit the results of your evaluation to EPA in accordance with the schedule contained in the SIP. If the review indicates that the actual emission reductions are not consistent with the estimated emission reductions, then the amount of credit should be adjusted appropriately and applicable remedial measures should be taken under the VMEP Policy. See the EPA's VMEP Guidance for further information regarding validation and reconciliation requirements for such measures.

5.3 **What types of penalties can be assessed for not complying with CAA requirements?**

Use of this guidance does not relieve you of any obligation to comply with all otherwise applicable CAA requirements, including those pertaining to the crediting of emission reductions for your SIP, such as emission reductions for your attainment demonstration or maintenance plan. Violations of CAA requirements are subject to administrative, civil, and/or criminal enforcement under CAA section 113, as well as to citizen suits under CAA section 304. The full range of penalty and injunctive relief options would be available to the federal or state government (or citizens) bringing the enforcement action.

Any person who submits false information to you or fails to implement or comply with provisions pursuant to this guidance necessary to demonstrate compliance with CAA requirements, should be subject to one or more of the following actions, as appropriate:

- (A) Disapprove the application for emission reductions;
- (B) Void all previously issued emission reductions;
- (C) Designate the responsible party to be ineligible to generate emission reductions;
- (D) Assess a penalty (see paragraph above).