PUBLIC NOTICE – ALL INTERESTED PARTIES

Electronic On-Board Recorders and Hours-of-Service Supporting Documents
RIN-2126-AB20

Notice of Proposed Rulemaking

DRAFT ENVIRONMENTAL ASSESSMENT

U.S. Department of Transportation
Federal Motor Carrier Safety Administration

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ABSTRACT: The Federal Motor Carrier Safety Administration (FMCSA) proposes to amend the Federal Motor Carrier Safety Regulations to require motor carriers operating commercial motor vehicles in operations requiring the use of a record of duty status (49 CFR 395.8) but whose operations do not permit them the option of using timecards, vehicles designed or used to transport nine or more passengers including the driver, and CMVs used to transport hazardous materials in bulk, to use electronic on-board recorders that meet or exceed the requirements of 49 CFR 395.16. FMCSA also proposes a requirement for motor carriers to systematically and effectively monitor each driver's compliance with hours-of-service requirements through the use of electronic on-board recorders records and supporting documents. FMCSA prepared this Draft Environmental Assessment to analyze potential impacts of this rulemaking and seeks comments on the analysis.

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1. PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

In accordance with procedures of the National Environmental Policy Act (NEPA) as amended, the Federal Motor Carrier Safety Administration's (FMCSA) NEPA Order 5610.1 (NEPA Implementing Procedures and Policy for Considering Environmental Impacts), and other applicable requirements, FMCSA prepared this Environmental Assessment (EA) to review the potential impacts of its Notice of Proposed Rulemaking (NPRM) for Electronic On-Board Recorders (EOBRs) and Hours of Service (HOS) Supporting Documents. Based on the findings of this EA, FMCSA has initially determined that an Environment Impact Statement (EIS) is not required and may issue a Finding of No Significant Impact (FONSI).

This EA provides an analysis of potential environmental consequences of revisions concerning the use of EOBRs to document compliance with hours-of-service (HOS) regulations (49 CFR part 395) and associated regulations to comply with maintaining HOS supporting documents to demonstrate compliance with the HOS regulations.

FMCSA proposes mandatory installation and use of EOBRs in CMVs operated by the following categories of CMVs and motor carrier operations:

- All property-carrying CMVs except those using only accurate and true time records to record drivers' HOS under the provisions of 49 CFR 395.1(e)(1) and (e)(2).
- All CMVs designed or used to transport nine or more passengers, including the driver. These include CMVs operated by motor carriers that would otherwise record drivers' HOS under the provisions of 49 CFR 395.1(e)(1).
- All CMVs used in transporting bulk quantities of material found by the Secretary of Transportation to be hazardous under 49 U.S.C. 5103 and transported in a quantity requiring placarding under regulations prescribed by the Secretary under 49 CFR, subtitle B, chapter I, subchapter C. These include CMVs operated by motor carriers that would otherwise record drivers' HOS under the provisions of 49 CFR 395.1(e)(1).

In accordance with the Council on Environmental Quality (CEQ) regulations (40 CFR 1501.7) for identifying the significant issues related to an action and FMCSA Order 5610.1, Chapter 2.D.10, "Reducing Paperwork in Preparation of Environmental Documents," this EA focuses on the significant issues and deemphasizes insignificant issues. Through the rulemaking process, as well as in accordance with CEQ, the Department of Transportation (DOT), and FMCSA environmental guidelines, and other environmental statutes, laws, and Executive Orders for NEPA review and analyses, FMCSA determined the scope of the environmental issues to be analyzed in detail (significant issues) and the issues that will be briefly reviewed. In accordance with Appendix 18 of FMCSA Order 5610.1, "Special Areas of Consideration When Implementing NEPA," FMCSA considered whether the action would impact air quality, noise, hazardous materials (HM), endangered species, cultural resources protected under the National

Historic Preservation Act, wetlands, and resources protected under Section 4(f), as well as other impact areas including public safety. Because the implementation of this action would only alter equipment on CMVs that monitor operating time (but influence driver safety issues and increase compliance with HOS regulations), FMCSA found that noise, endangered species, cultural resources protected under the National Historic Preservation Act, wetlands, and resources protected under Section 4(f) of the DOT Act would not be impacted.

The impact areas that may be affected and are evaluated in this EA include:

- Air quality and Clean Air Act requirements
- Hazardous materials transportation
- Solid waste
- Public safety

This EA presents the results of FMCSA's analysis and provides a basis for FMCSA to determine whether the potential effects of the action and alternatives warrant consideration in an EIS or if a FONSI could be issued or whether the Agency should withdraw its action on the basis of the environmental impacts. FMCSA requests comments on this analysis.

1.2 BACKGROUND

The Federal HOS regulations (49 CFR part 395) limit the number of hours a CMV driver may drive and be on duty each day and during each 7- or 8-day period. The rules are needed to prevent commercial vehicle operators from driving for long periods without opportunities to obtain adequate sleep. Sufficient sleep is necessary to ensure that a driver is alert behind the wheel and able to respond appropriately to changes in the driving environment. Under 49 CFR 395.8, all motor carriers and drivers subject to Part 395 of the FMCSRs (except private motor carriers of passengers [non-business]) must keep records to track on-duty and off-duty time. FMCSA and State agencies use these records to carry out safety oversight activities.

On December 17, 2007, the National Transportation Safety Board (NTSB) issued Safety Recommendation H-07-041 to FMCSA to "require all interstate commercial vehicle carriers to use electronic on‑board recorders that collect and maintain data concerning driver hours of service in a valid, accurate, and secure manner under all circumstances, including accident conditions, to enable the carriers and their regulators to monitor and assess hours‑of‑service compliance." In October 2008, NTSB added the safety recommendation to "require Electronic Onboard Data Recorders to Maintain Accurate Carrier Records on Driver Hours of Service" to its "Most Wanted" list.

This NPRM is the next step to continue the Agency's commitment to address motor carrier and highway safety concerns relating to driver fatigue. As FMCSA stated in its April 2010 Final Rule, (75 FR 17208),

> "Finally, because FMCSA recognizes that the potential safety risks associated with some motor carrier categories, such as passenger carriers, hazardous materials transporters, and new motor carriers seeking authority to conduct interstate operations in the United States, are such that mandatory EOBR use for such operations might be appropriate, the Agency will initiate a new rulemaking to consider expanding the scope of mandatory EOBR use beyond the "1 x 10" carriers that would be subject to a remedial directive as a result of today's rule."

FMCSA now initiates a new rulemaking action to propose expanding the requirements for mandatory use of EOBRs. The Agency continues to be concerned about motor carriers' and drivers' inclinations to circumvent the HOS regulations in an effort to improve their business competitiveness. In addition, as some commenters to the 2007 NPRM docket indicated, a regulation that promotes voluntary use of EOBRs, but that does not require it for the majority of carriers, will not persuade most carriers to adopt the devices even though they may generate improvements to carriers' operational productivity. And, as other commenters noted, a more universal approach to EOBR use may promote a leveling of the playing field in the freight and passenger carrier industries.

The Agency considered including carriers, vehicles, and drivers of bulk HM in this NPRM. It did so because a crash involving a CMV transporting bulk HM can endanger a large number of people, cause significant damage to infrastructure, and generate greater traffic congestion than a crash involving a CMV transporting other cargoes. Although these events are infrequent, the Pipeline and Hazardous Materials Safety Administration's Hazardous Materials Risk Management Program considers the potential risks they pose to persons, property, and the environment to be "low probability, high consequence events"(Comparative Risks of Hazardous Materials and Non-Hazardous Materials Truck Shipment Accidents/Incidents, Final Report. Prepared for Federal Motor Carrier Safety Administration, March 2001). The Agency seeks additional data and information concerning the safety of bulk HM carriers in that are not currently required to use RODS. This will aid the Agency in determining whether to require this category of motor carriers to use EOBRs.

Similarly, the risk of fatalities or serious injuries when a crash involves a passenger-carrying CMV is such that the Agency considered proposing a requirement for EOBR use in this industry sector (excluding the 9-15 passenger carriers not for direct compensation segment). DOT's Motor Coach Safety Action Plan notes seven priority action items to reduce motorcoach crashes, fatalities, and injuries. The first priority action item is to initiate rulemaking to require EOBRs on all motorcoaches. The provisions of today's proposal would apply only to those passenger carrier operations where the driver is required to complete a RODS. The Agency, however, is considered proposing a requirement for SH motor carriers of passengers to use EOBRs . It seeks additional data and information about the safety of this group of carriers, drivers, and vehicles.

FMCSA considered requiring only drivers in LH operations (that is, those operating beyond a 150 air-mile radius) to use EOBRs. An "LH only" option would address the segment of the

motor carrier industry with the highest safety and HOS compliance gaps and has the highest estimated net benefit. However, it would not address the safety concerns associated with SH motor carriers, especially those operations on the days when RODS, rather than timecards, are required.

The Agency also considered requiring EOBRs for all motor carriers subject to 49 CFR Part 395. The estimated compliance costs of this "true universal" approach, which the National Transportation Safety Board (NTSB)[1] and others advocated, exceed the estimated safety benefits for most SH motor carriers; and the overall net benefits are negative.

Therefore, this NPRM is intended to improve CMV safety through increasing use of EOBRs within the motor carrier industry to improve their HOS compliance. The approach has two components: (1) requiring EOBRs to be used by considerably more motor carriers and drivers and (2) requiring motor carriers to develop and maintain systematic HOS oversight for their drivers and providing additional incentives to promote EOBR use by simplifying the supporting documents requirements. FMCSA believes this approach strikes an appropriate balance between promoting highway safety and minimizing cost and operational burdens.

Motor carrier productivity is highly dependent on efficient and effective use of drivers' time. The HOS regulations exist to provide a safety "floor" to prevent excessive hours of driving and driving after long periods of work, as well as to provide drivers the opportunity for restorative rest. If a motor carrier directs a driver to exceed these limits by exceeding the regulatory limit on driving-time, driving after exceeding maximum daily or multi-day work periods, taking less time off-duty than the minimum required, or a combination of these, the potential for crashes and other negative safety outcomes increases. The research literature on HOS and driving safety is discussed extensively in the "History of HOS Recording Regulations" section of the NPRM, as well as current and historical HOS rulemakings.

The Agency agrees with the commenters to many rulemakings over the years that there is a strong potential for falsification of paper Record of Duty Status (RODS). However, until relatively recently, the cost estimates for a broadly-applied EOBR mandate have far exceeded the potential benefits to society, and the high cost of HOS recording devices and systems had placed them out of the reach of many motor carriers. At the same time, the value of a statistical life saved, used for regulatory analyses, did not provide an estimate of benefits that would have exceeded the cost of a broadly-applied HOS-recorder mandate.

1.3 SCOPE OF ANALYSIS

This EA will analyze the potential environmental consequences associated with adopting possible options in the NPRM. Chapter 1 of this EA offers background information regarding the purpose of and need for the rulemaking. Chapter 2 describes FMCSA's Federal actions and

[1] NTSB Safety Recommendation H-07-041 issued on December 17, 2007.

the no-action alternative. Chapter 3 describes both the affected environment and the potential environmental consequences to the affected environment resulting from the action and the no-action alternative. Per FMCSA Order 5610.1, this EA will focus on those resource categories that are potentially impacts of interest to the public or important to the decision. These resource categories include public health and safety, HM transportation, socioeconomics, solid waste disposal, and congestion and air quality. Chapter 3 also offers a summary comparison of each alternative's environmental consequences. Chapter 4 lists those agencies and persons with whom FMCSA consulted during this NEPA compliance process, as well as preparers and reviewers of this document. Chapter 5 lists references consulted during the development of this document.

The potential impacts of this rulemaking on the environment are related mainly to: 1) any increased idling time associated with compliance with the HOS regulations that the required use of EOBRs produces, 2) the expected reduction in crashes and subsequent emissions by increased compliance with the HOS regulations, and 3) regulatory changes concerning the retention of supporting documents to verify HOS compliance. The purpose of mandating EOBRs for CMV drivers is to reduce or prevent HOS violations and crashes associated with sleep-deprived and fatigued drivers. This means that some drivers are going to have to take a required sleeper-berth period before making or completing a delivery that, if they were close to violating the HOS regulations, they might do without taking a break. When drivers use a sleeper berth in the cab, they most likely are idling the vehicle's engine to run auxiliary equipment such as phones, televisions, or other electronics and appliances. They also may idle their vehicles for climate control purposes, often idling the vehicle during an 8-10 hour period (drivers using sleeper-berth-equipped vehicles may split the minimum 10 hours of off-duty time into two periods, the longer of which must be at least 8 hours and the shorter of which must be at least 2 hours). Since this rulemaking focuses on compliance rates and assumes that the rulemaking will address the non-compliance of HOS rules, FMCSA assumes that this mainly affects long-haul operators.

Section 3.2, "Environmental Consequences," examines the impact of this rulemaking on current HOS regulations. However, FMCSA is also in the process of examining new HOS rules that could affect the environmental impacts of this rulemaking since the environmental impacts of requiring EOBRs depend greatly on the HOS rule the EOBRs help to enforce. In order to provide a complete EA, FMCSA examines the impacts of mandatory EOBR use across a broad CMV population in relation to FMCSA's recent EOBR rule and FMCSA's proposed HOS rule in Section 3.3, "Cumulative Impacts."

2. DESCRIPTION OF ALTERNATIVES

2.1 OVERVIEW OF ALTERNATIVES

This section provides an overview of the alternatives FMCSA is considering in this rulemaking. In this case, there are two Options FMCSA could take: Option 1 is the baseline No-Action alternative. Option 2 is FMCSA's proposed option for widening the use of EOBRs in the industry. This rule is related to the prior EOBR rulemaking (75 FR 17208, April 5, 2010) and is a follow-up to that rule. That final rule updated the 22-year-old technical specifications for HOS recording devices and applied a remedial directive approach to require only motor carries with severe HOS noncompliance to obtain, install, and use EOBRs in their CMVs. Although broader usage was discussed, it was not proposed for the April 2010 final rule because it went beyond the scope of the NPRM.

In the regulatory evaluation for this rulemaking, FMCSA separates costs of the rule into two additional baseline estimates to demonstrate the cost impacts of applying the EOBR requirements in various segments. This analysis also describes the economic impacts of applying a mandatory EOBR requirement to the entire motor carrier population that is required to follow HOS requirements. Because FMCSA is trying to implement the EOBR rule in a cost effective manner with maximum safety benefits, FMCSA has ruled out using these baselines and applying the requirements to the population of motor carriers subject to HOS requirements but provides them in the regulatory evaluation or Regulatory Impact Analysis (RIA), which is located in the docket for this NPRM. The reader is referred to the RIA for further details.

The two options analyzed in this EA are further described below. Impacts to the environment as a result from these two options are considered in Chapter 3 of this EA.

2.2 OPTION 1: NO-ACTION ALTERNATIVE

This is a No-Action Alternative that will be used as a baseline to compare the proposed action against the impacts to the environment. Under this option, FMCSA would not require EOBR usage in a broader population of motor carriers.

2.3 OPTION 2: MANDATORY EOBR USE IN RODS POPULATION (FMCSA Preferred Option)

Under Option 2, which is FMCSA's preferred option, FMCSA would require EOBRs only in the population of motor carriers currently required to complete and maintain RODS. This is further defined by the regulations as all property-carrying CMVs except those using only accurate and true time records to record drivers' HOS under the provisions of 49 CFR 395.1(e)(1) and (e)(2).

2.4 OPTION 3: MANDATORY EOBR USE IN BROADER CMV POPULATION

Under this option FMCSA proposes mandatory installation and use of EOBRs in CMVs operated by the following categories of motor carrier operations:

- All property-carrying CMVs except those using only accurate and true time records to record drivers' HOS under the provisions of 49 CFR 395.1(e)(1) and (e)(2).
- All CMVs designed or used to transport nine or more passengers, including the driver, in interstate commerce, for compensation. These include CMVs operated by motor carriers that would otherwise record drivers' HOS under the provisions of 49 CFR 395.1(e)(1).
- All CMVs designed or used to transport 16 or more passengers, including the driver, operating in interstate commerce.
- All CMVs used in transporting bulk quantities of material found by the Secretary of Transportation to be hazardous under 49 U.S.C. 5103 and transported in a quantity requiring placarding under regulations prescribed by the Secretary under 49 CFR, subtitle B, chapter I, subchapter C. These include CMVs operated by motor carriers that would otherwise record drivers' HOS under the provisions of 49 CFR 395.1(e)(1).

This approach has two components: (1) requiring EOBRs to be used by considerably more motor carriers and drivers and (2) requiring motor carriers to develop and maintain systematic HOS oversight for their drivers and providing additional incentives to promote EOBR use by simplifying the supporting documents requirements.

2.5 OPTION 4: MANDATORY EOBR USE IN ALL HOS MOTOR CARRIERS

This option is the broadest option possible. It would require mandatory EOBR use in all motor carriers that are required to comply with the HOS requirements. In the RIA for this rulemaking, FMCSA determined that this Option is not cost affective. It is analyzed here and in the RIA since there was interest from the regulated community to know the potential impacts for applying the EOBR requirements to the broadest population possible.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter begins by describing the environment affected by the rulemaking. It then presents the potential environmental consequences to that affected environment resulting from the proposed action and its alternatives. Per FMCSA Order 5610.1, the EA will focus only on those resource categories that are potentially impacted, of interest to the public, or important to the decision to require the use of EOBRs on CMVs.

3.1 AFFECTED ENVIRONMENT

The actual physical environment that may be affected by the proposed changes include the environment around the roads over which motor carriers operate. These roads and the infrastructure of the roadway system that CMVs utilize could be affected by CMV crashes where drivers may be involved in crashes or environmental impacts are realized. This rule affects motor carrier operations across the United States. Subsequently, emissions released or prevented by this rulemaking are national in scope and all analysis of impacts are at a national level.

The resource areas examined and analyzed include:

1) Air Quality and Clean Air Act (CAA) Requirements
2) Socioeconomics
3) Public Health and Safety
4) Solid Waste
5) Hazardous Materials

Sections 3.1.1 – 3.1.6 describe these resources areas starting with a broad overview of the physical environment that is potentially affected by this rulemaking.

3.1.1. Physical Environment Affected

The physical environment potentially affected by the proposed action includes: the airspace, water resources (e.g., streams, lakes), cultural and historical properties (e.g., properties listed on the National Register of Historic Places), biological and ecological resources (e.g., wetlands, plant and animal species and their habitats, forests, grasslands), and special ecological resources (e.g., threatened and endangered plant and animal species and their habitat, national and State parklands, biological reserves, wild and scenic rivers) that exist directly adjacent to and in the vicinity of the roads, terminals, and facilities where CMVs operate.

Figure 1.0 depicts the national highway system, which is approximately 160,000 miles (256,000 kilometers) of roadway important to the nation's economy, defense, and mobility (FHWA 2005). As shown in Figure 1.0, the impact of changes to the highway system or to vehicles operating on the highway system affects the whole nation.

In addition, because CMVs operate throughout the entire highway system, the potential for CMV crashes exist along all of these roads. With very few exceptions, the FMCSRs apply to CMVs as defined in 49 CFR 390.5 – and not with regard to whether the driver is required to hold a Commercial Driver's License (CDL) or State-classified operator's license.[2] CMV crashes impact their immediate environment because of physical alterations (such as a fire that destroys an overpass), fuel spills, commodity spills (especially pertinent in spills of HM), and the noise generated from the crash and ensuing emergency response. CMV crashes also produce traffic congestion resulting in increased emissions, both of which can be fairly significant.

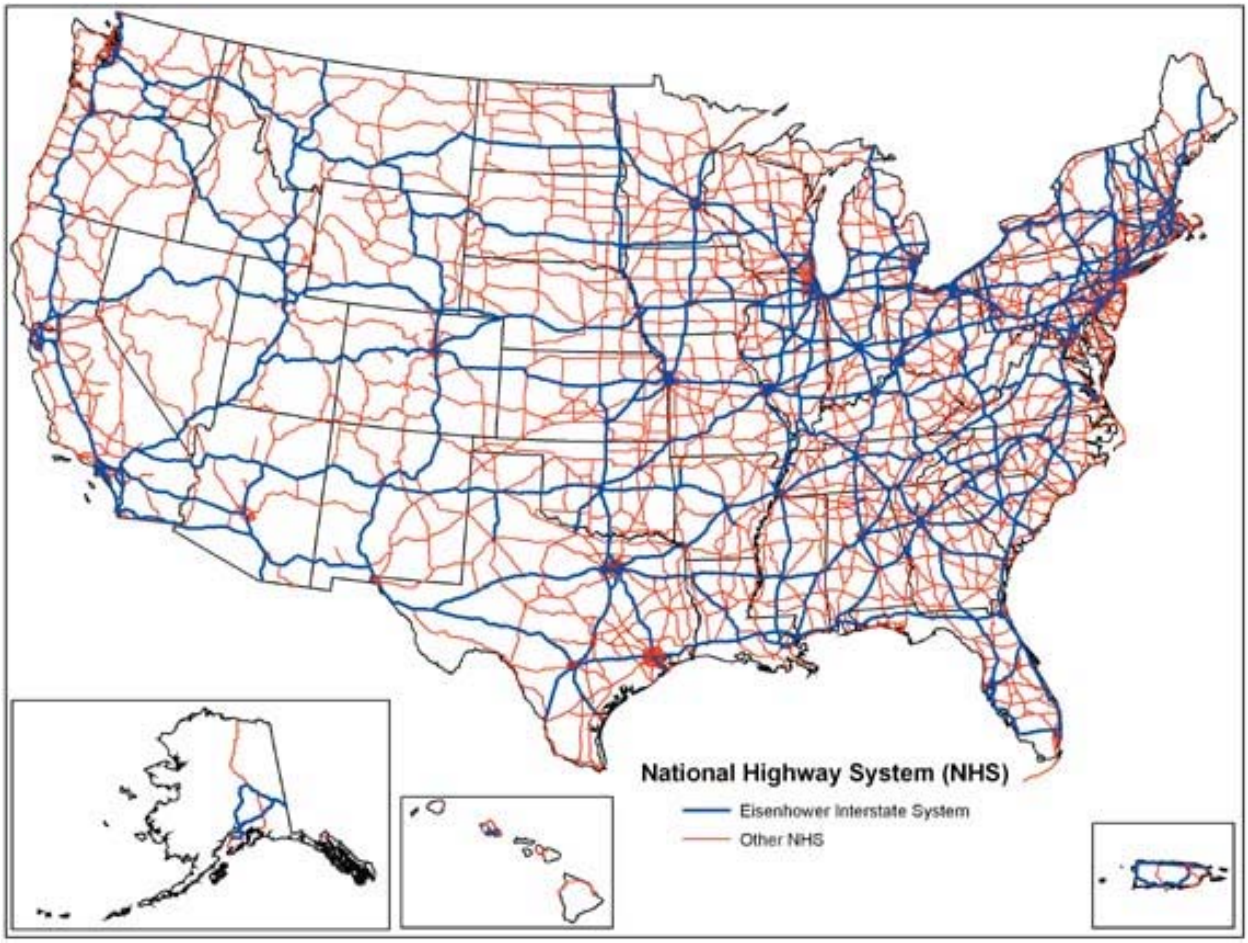

Figure 1.0 National Highway System (FHWA 2005)

[2] [2] Commercial motor vehicle means any self-propelled or towed motor vehicle used on a highway in interstate commerce to transport passengers or property when the vehicle—

(1) Has a gross vehicle weight rating or gross combination weight rating, or gross vehicle weight or gross combination weight, of 4,536 kg (10,001 pounds) or more, whichever is greater; or

(2) Is designed or used to transport more than 8 passengers (including the driver) for compensation; or

(3) Is designed or used to transport more than 15 passengers, including the driver, and is not used to transport passengers for compensation; or
(4) Is used in transporting material found by the Secretary of Transportation to be hazardous under 49 U.S.C. 5103 and transported in a quantity requiring placarding under regulations prescribed by the Secretary under 49 CFR, subtitle B, chapter I, subchapter C.

The physical environmental also includes the drivers and motor carriers that would be impacted by the proposals in this rulemaking. There are upwards of 7 million commercial drivers license holders with an estimate of about 4.4 million active drivers[3] which fall under the Federal Motor Carrier Safety regulations.

3.1.2 Air Quality and Clean Air Act Requirements

Under the authority of the Clean Air Act (CAA) as amended (42 U.S.C. 7401 et seq.) and implementing regulations promulgated by the U.S. Environmental Protection Agency (EPA), EPA established a set of NAAQS for "criteria" pollutants, as follows: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone, particulate matter (PM) less than 10 micrometers in diameter (PM_{10}), PM less than 2.5 micrometers in diameter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). The NAAQS include "primary" standards and "secondary" standards. Primary standards are intended to protect public health. Secondary standards are set at levels designed to protect public welfare by accounting for the effects of air pollution on vegetation, soil, materials, visibility, and other aspects of the general welfare. Table 1 below provides information about the standards established by the NAAQS.

The health effects of the six Federal criteria pollutants are briefly summarized below. (This section is adapted from the information at http://www.epa.gov/oar/oaqps/greenbk/index.html.) *CO* is a colorless, odorless, and poisonous gas produced by incomplete burning of carbon in fuels. Motor vehicles (primarily automobiles) are the largest source of CO emissions nationally. When it enters the bloodstream, CO reduces the delivery of oxygen to the body's organs and tissues. Health threats are most serious for those who suffer from cardiovascular disease, particularly those with angina or peripheral vascular disease.

Lead exposure can occur through multiple pathways, including inhalation of air and ingestion of lead in food, water, soil, or dust. Excessive lead exposure can cause seizures, mental retardation, and behavioral disorders, and even low doses of lead can lead to central nervous system damage. Because of the prohibition of lead as an additive in liquid fuels, highway transportation sources are no longer a major source of lead pollution.

TABLE 1. NAAQS for Criteria Pollutants

Pollutant	Type of Standard	Standard Value	Averaging Period
Carbon monoxide	Primary	35 ppm (40 mg/m^3)	1-hour average[a]
	Primary	9 ppm (10 mg/m^3)	8-hour average[a]
Lead[b]	Primary and Secondary	1.5 µg/m^3 (1978 standard)	Calendar quarterly average

[3] From the motor carrier management information system (MCMIS) data sets. Counts of drivers and CDL holders can vary depending on filtering methods and determination criteria for being an "active" driver.

TABLE 1. NAAQS for Criteria Pollutants

Pollutant	Type of Standard	Standard Value	Averaging Period
	Primary and Secondary	0.15 μg/m^3 (2008 standard)	Rolling 3-month average
Nitrogen dioxide	Primary	100 ppb (188 μg/m^3)	1-hour average[c]
	Primary and Secondary	53 ppb (100 μg/m^3)	Annual average
Ozone[d]	Primary and Secondary	0.08 ppm (1997 standard)	8-hour average
	Primary and Secondary	0.075 ppm (2008 standard)	8-hour average
Particulate matter (PM_{10})	Primary and Secondary	150 μg/m^3	24-hour average
Particulate matter ($PM_{2.5}$)	Primary and Secondary	35 μg/m^3	24-hour average
	Primary and Secondary	15 μg/m^3	Annual average
Sulfur dioxide[e]	Primary	75 ppb (200 μg/m^3)	1-hour average[f]
	Secondary	0.5 ppm (1300 μg/m^3)	3-hour average

[a] Not to be exceeded more than once per year.

[b] EPA is retaining the 1978 lead standard of 1.5 μg/m^3 until 1 year after EPA has designated nonattainment areas for the 2008 standard. EPA expects to designate nonattainment areas for the 2008 standard by January 2012.

[c] Standard effective January 22, 2010.

[d] The 1-hour standard has been revoked, but some areas have continuing obligations in which the standard may not be exceeded more than once per year. The 1997 ozone 8-hour standard of 0.08 ppm will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition to the 2008 standard of 0.075 ppm. On January 19, 2010 EPA proposed to reduce the 8-hour ozone standard to a level between 0.060 and 0.070 ppm. EPA plans to issue the final standard by August 31, 2010.

[e] On June 2, 2010 EPA revoked the 24-hour primary standard of 0.14 ppm and the annual primary standard of 0.03 ppm.

[f] Standard effective June 2, 2010.

Notes: ppm = parts per million; ppb = parts per billion; mg/m^3 = milligrams per cubic meter; μg/m^3 = micrograms per cubic meter.

NO_2 is a brownish, highly reactive gas, caused largely by oxidation of the primary air pollutant nitric oxide (NO). NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections. Nitrogen oxides (NO_2 and NO) are an important precursor both to ozone and acid rain, and can affect both terrestrial and aquatic ecosystems. Ozone is a photochemical oxidant and the major component of smog. Ozone is not emitted directly into the air, but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and oxides of nitrogen (NO_x) in the presence of sunlight. Heavy-duty diesel vehicles (HDDVs), including large trucks and buses, are a major source of NO_x emissions. The majority of the CMVs affected by the rule are HDDVs. Ground-level ozone causes health problems by damaging lung tissue, reducing lung function, and

sensitizing the lungs to other irritants. Exposure to ozone for several hours at relatively low concentrations has been shown to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise.

PM includes dust, dirt, soot, smoke, and liquid droplets directly emitted into the air, and particles formed in the atmosphere by condensation or transformation of emitted gases such as SO_2 and VOCs. HDDVs are a major source of PM emissions. Exposure to high concentrations of PM can affect breathing and respiratory symptoms, aggravate existing respiratory and cardiovascular disease, alter the body's defense systems against foreign materials, damage lung tissue, and cause cancer and premature death.

SO_2 results largely from stationary sources. High concentrations of SO_2 affect breathing and can aggravate existing respiratory and cardiovascular disease. SO_2 also is a primary contributor to acidic deposition, or acid rain, which causes acidification of lakes and streams and can damage trees, crops, historic buildings, and statues.

For areas that do not meet the NAAQS (these are designated by EPA as nonattainment areas), the CAA establishes levels and timetables for each region to achieve attainment of the NAAQS. The State must prepare a State Implementation Plan (SIP), which documents how the region will reach its attainment levels by the required date. A SIP includes inventories of emissions within the area and establishes emissions budgets that are designed to bring the area into compliance with the NAAQS. In maintenance areas, SIPs document how the State intends to maintain compliance with NAAQS.

Section 176(c) of the CAA prohibits Federal entities from taking actions in nonattainment or maintenance areas that do not "conform" to the SIP. The purpose of this conformity requirement is to ensure that Federal activities: (1) do not interfere with the budgets in the SIPs; (2) do not cause or contribute to new violations of the NAAQS; and (3) do not impede the ability to attain or maintain the NAAQS. To implement CAA Section 176(c), EPA issued the General Conformity Rule (40 CFR Part 93, Subpart B), which applies to all Federal actions not funded under U.S.C. Title 23 or the Federal Transit Act. (FMCSA actions are not funded by U.S.C. Title 23 or the Federal Transit Act.) The General Conformity Rule, which was amended on April 5, 2010, established emissions thresholds, or *de minimis* levels, for use in evaluating the conformity of a federal action (75 FR 17254). If the net emissions increases due to the action are less than these thresholds, it is presumed to conform and no further conformity evaluation is required. If the emissions increases exceed any of these thresholds, a conformity determination is required. The conformity determination can entail air quality modeling studies, consultation with EPA and state air quality agencies, and commitments to revise the SIP or to implement measures to mitigate air quality impacts.

The General Conformity Rule contains several exemptions applicable to Federal actions, which the conformity regulations define as "any activity engaged in by a department, agency, or instrumentality of the Federal Government, or any activity that a department, agency or instrumentality of the Federal Government supports in any way, provides financial assistance for,

licenses, permits, or approves, other than activities [subject to transportation conformity]." 40 CFR 93.152. The General Conformity Rule defines emissions as "direct" or "indirect" (75 FR at 17260). Actions that do not meet the definitions of direct or indirect emissions are exempt from the General Conformity Rule. "Direct emissions" are those that occur at the same time and place as the Federal action. In the case of this matter, the Federal action is a rulemaking and no emissions occur at the same time and place as the Federal action; thus the proposed action has no direct emissions. The definition of "indirect emissions" contains four criteria, all of which must be met. As stated in 40 CFR 93.152, indirect emissions mean those emissions of a criteria pollutant or its precursors:

(1) That are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action;
(2) That are reasonably foreseeable;
(3) That the agency can practically control; and
(4) For which the agency has continuing program responsibility.

For the purposes of this definition, even if a Federal licensing, rulemaking, or other approving action is a required initial step for a subsequent activity that causes emissions, such initial steps do not mean that a Federal agency can practically control any resulting emissions. 40 CFR 93.152.

Climate Change and Greenhouse Gas Emissions

Climate change refers to long-term fluctuations in temperature, precipitation, wind, and other elements of Earth's climate system. Atmospheric gases affect Earth's surface temperature by absorbing solar radiation that would otherwise be reflected back into space. The concentration of GHGs is increasing as a result of human activities according to EPA's *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2008* (EPA 2010). Although there are a variety of GHGs, carbon dioxide (CO_2) is the most significant one resulting from human activity. Motor vehicles contribute to CO_2 concentrations, and to concentrations of other GHGs including methane and nitrous oxides.

The impact of an individual GHG on Earth's absorption of radiation is measured as global warming potential. Global warming potential values can be used to express the quantity of a GHG in terms of its CO_2-equivalent (CO_2e). Rather than assessing the individual contribution from each GHG, FMCSA considered CO_2e when assessing the effect of the action alternatives on GHG emissions. The total 2008 U.S. GHG emissions from medium- and heavy-duty trucks in terms of CO_2e is made up of 96.9 percent CO_2, 2.9 percent hydrofluorocarbons, 0.2 percent nitrous oxide, and 0.02 percent methane (EPA 2010, Table 2-15).
U.S. GHG emissions have been increasing over time, but total emissions have been nearly level since 2005 (EPA 2010). Table 2 shows total U.S. GHG emissions and GHG emissions from transportation sources since 1990. Transportation sources account for approximately 32 percent of the total U.S. CO_2e emissions from fossil fuel combustion (EPA 2010, Table ES-2). Freight

trucks were responsible for 21 percent of total transportation GHG emissions in 2008 (EPA 2010).

Table 2. U.S. Greenhouse Gas Emissions (million tons CO_2)

Emission Sources	1990	1995	2000	2005	2006	2007	2008
Transportation Sources	1,485.8	1,608.0	1,809.5	1,895.3	1,876.7	1,893.7	1,785.3
Total Fossil Fuel Combustion	4,735.7	5,029.5	5,593.4	5,753.3	5,652.8	5,757.0	5,572.8
Percent of Total Fossil Fuel Combustion	31.37 %	31.97 %	32.35%	32.94 %	33.20 %	32.89%	32.04%

Source: EPA (2010), Table ES-2.

3.1.3 Socioeconomics

FMCSA estimates that approximately 500,000 motor carriers with 4,000,000 drivers and 3,637,000 CMVs are currently subject to the HOS rules. Roughly 60 percent of the industry is engaged in SH operations and 40 percent in long haul operations, although these percentages vary with different segments of the industry. Table 1 below summarizes the number of affected carriers, drivers, and CMVs in total and for the individual segments analyzed. The explanation of how these numbers were derived can be found in Appendix A.

Table 1: Summary of Regulated Entities (thousands)

		Total	**Motor-coach**	**Other Pass-enger**	**Bulk HM**	**Large**	**Medium**	**Small**
Total	**Carriers**	500	10	10	18	<1	2	464
	Drivers	4,000	54	199	396	1,860	711	780
	CMVs	3,637	49	181	360	1,691	646	710
LH	**Drivers**	1,619	28	40	238	558	356	399
	CMVs	1,472	25	36	216	507	323	365
SH	**Drivers**	2,381	28	159	158	1,302	356	378
	CMVs	2,165	25	145	144	1,184	323	344

The magnitude of costs and benefits of this rule is determined by the number of drivers and CMVs covered by the mandate. However, the effects of different sources of costs and benefits are not uniform for all drivers and CMVs. For example, the safety benefits of the HOS rules are highest for LH drivers, those most at risk to suffer from inadequate rest because of longer continuous daily driving periods and nights away from home. For these reasons, long haul carriers are the most likely to already be using EOBRs or Fleet Management Systems (FMS) to efficiently route their drivers or to track their whereabouts. Full EOBR can likely be accomplished more rapidly and at lower costs for long haul operations. SH operations accrue smaller safety benefits from the HOS rules, and those SH carriers exempt from paper RODS requirements will likely have no voluntary EOBR use and would not benefit from the elimination of paper RODS afforded by EOBRs. The Agency assumes that 25 percent of SH operations are exempt from RODS[4].

3.1.4 Public Health and Safety

FMCSA's primary mission is to reduce fatalities and serious injuries from CMV crashes. Thus the rules and actions taken by FMCSA primarily involve regulations that achieve this goal. Table 4 shows data for large trucks for 2003 through 2008 on average fatal crash and injury crash incidents and property damage only crash incidents.

Table 4. Number of Large Truck Crashes by Year

	Total Number of Crashes						
Category	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**Average**
Fatal Crashes	4,335	4,478	4,551[a]	4,350	4,204	3,733	4,275
Total fatalities	5,036	5,235	5,240[a]	5,027	4,822	4,229	4,932
– Truck occupants	726	766	804[a]	805	805	677	764
– Other vehicle occupants	4,645	4,808	4,775[a]	4,602	4,413	3,816	4,510
– Non-vehicle occupants	391	427	465[a]	425	396	401	418
Trucks involved	4,721	4,902	4,951[a]	4,766	4,633	4,066	4,673
–	3,523	3,642	3,664[a]	3,508	3,439	2,991	3,461

[4] [4] See the currently approved supporting statement for the HOS Information Collection Request (ICR) (OMB control number 2126-0001) and the update supporting statement that accompanies this NPRM. The ICR estimates that 35 percent of interstate and *intrastate* drivers (assuming States adopt compatible HOS provisions for intrastate drivers) would be exempt from RODS requirements. The Agency assumes that a lower percentage, 25 percent, of the interstate-only population of drivers would be exempt from RODS.

Table 4. Number of Large Truck Crashes by Year

Category	Total Number of Crashes						Average
	2003	2004	2005	2006	2007	2008	
Combination trucks involved							
– Single-unit trucks involved	1,198	1,258	1,274[a]	1,254	1,186	1,060	1,205
Single-vehicle crashes	751	785	850[a]	836	830	741	799
Injury Crashes	85,000	83,000	78,000	77,000	72,000	64,000	76,500
Total injuries	122,000	116,000	114,000	106,000	101,000	90,000	108,167
Trucks involved	89,000	87,000	82,000	80,000	76,000	66,000	80,000
– Combination trucks involved	49,000	47,000	46,000	41,000	41,000	38,000	43,667
– Single-unit trucks involved	40,000	39,000	34,000	39,000	35,000	28,000	35,833
Property Damage Only Crashes	347,000	312,000	341,000	287,000	317,000	297,000	316,833
Trucks involved	363,000	324,000	354,000	300,000	333,000	309,000	330,500
– Combination trucks involved	172,000	168,000	177,000	150,000	163,000	149,000	163,167
– Single-unit trucks involved	191,000	156,000	118,000	149,000	170,000	161,000	157,500

Source: Federal Motor Carrier Safety Administration (2010a).

[a] These data for 2005 are taken from the *Large Truck and Bus Crash Facts 2008* report (FMCSA 2010b) and are updates to the data presented in the *Large Truck Crash Facts 2005* report (FMCSA 2007).

Note: Total numbers might vary due to rounding.

3.1.5 Solid Wastes

CMV crashes can generate solid wastes. The Resource Conservation and Recovery Act (RCRA) and related regulations establish the waste management requirements that apply to CMV crash generated waste. The chassis and engines, as well as associated fluids and components of trucks, buses, and automobiles and the contents of the vehicle can all be deemed waste. The waste can also include damage to the roadway infrastructure including road surface, barriers, bridges, and signage. The purpose of this report section is to quantify solid waste generated from CMV crashes.

Waste material has one of three fates. First, the material can be returned to the originally intended use: vehicles can be repaired, cargo can be still be utilized. Second, damaged vehicles parts or cargo may be recycled, depending on market demand and availability of recycling technology and facilities. Third, material that cannot be repaired or recycled must be abandoned. The term abandoned refers to material that is either disposed in a landfill or burned in an incinerator.

According to RCRA regulations the definition of a solid waste encompasses the following materials: (1) materials that are abandoned; (2) materials that are recycled, (3) materials that are inherently waste-like, and (4) waste military munitions (40 CFR 261.2). Recycled materials still fall under regulatory classification of solid waste depending on the type of material and recycling method. For example, for CMV crashes, scrap metal from automobiles is regulated as a solid waste (40 CFR 261.1(c)(6)). All materials that are permanently disposed of due to CMV crashes are technically solid waste (including liquids). These materials can include components of vehicles that are discarded during repair.

FMCSA's actions and proposed regulations to reduce the number and severity of CMV crashes may impact the quantity and number of occurrences of collisions producing solid waste generated in the U.S. Less solid waste translates into cost savings from reductions in the following areas: (1) transport of waste material, (2) energy required for recycling efforts, and (3) landfill or incinerator fees.

3.1.6 Hazardous Materials

The federal hazardous materials transportation law, 49 U.S.C. § 5101 et seq., (formally the Hazardous Materials Transportation Act, 49 App. U.S.C. § 1801 et seq.) is the basic statute regulating hazardous materials transportation in the U.S. The purpose of the law is to provide adequate protection against the risks to life and property inherent in transporting HM in commerce by improving the regulatory and enforcement authority of the Secretary of Transportation (Secretary).

The Secretary has the authority to designate a material or a group or class of materials as hazardous when the Secretary decides that transporting the material in commerce in a particular amount and form may pose an unreasonable risk to health and safety or property. The HM

regulations (HMR) can be found at Title 49 CFR Parts 171-180. The HMR cover five areas as follows:

- Hazardous materials definition/classification (Part 172, Subparts A-B, and Part 173);
- Hazard communication (Part 172, Subparts C-G);
- Packaging requirements (Parts 173, 178, 179 and 180);
- Operational rules (Parts 171, 173, 174, 175, 176 and 177); and
- Training (Part 172, Subpart H).

The U.S. DOT, Pipeline and Hazardous Materials Safety Administration (PHMSA), has public responsibilities for the safe and secure movement of HM to industry and consumers by all transportation modes, including the nation's pipelines. PHMSA's Office of Hazardous Materials Safety (OHMS) is the federal safety authority for the transportation of HM by air, rail, highway and water.

The HMR (49 CFR Section 171.16) require that certain type of HM incidents be reported to PHMSA on US DOT Form F 5800.1, Hazardous Material Incident Report (HMIR). The information in the report is fundamental to HM transportation risk analysis and risk management by government and industry. Additional information on transportation and HM can be found on the PHMSA website at (www.phmsa.dot.gov).

CMV crashes can result in the release of hazardous materials (HM) into the environment. Crashes occur in varying locations and with varying amounts and types of HM being released from the CMV cargo. Environmental impacts are dependent on these variables. In addition, HM from the CMV cargo is also released into the environment from non-crash related incidents that occur during in-transit movements, loading, unloading and in-transit temporary storage. Similar to CMV crashes, the environmental impacts are dependent on the location, quantity and type of HM being released.

In general, HM are substances that may pose a threat to public safety or the environment during transportation, because of their physical, chemical, or radioactive properties. The potential for environmental damage or contamination exists when packages of HM are involved in crashes or en route incidents resulting from cargo shifts, valve failures, package failures, or loading, unloading, or handling problems. Accidental releases of HM can result in explosions or fires. Radioactive, toxic, infectious, or corrosive HM can have short- or long-term exposure effects on humans or the environment. Diesel fuel released during a CMV crash from a fuel tank rupture, although not classified as a HM under federal HM transportation law can also adversely impact the environment.

3.2 ENVIRONMENTAL CONSEQUENCES

This section examines the impacts to the environment from the options being considered in this rulemaking. The reader should also note that the impacts in the section measure the use of EOBRs according to the HOS regulations in place as of 2005, the last substantive revisions of the HOS rules. Because the Agency is also considering a rulemaking which may revise the HOS rules, the environmental impacts may differ slightly as the HOS rules change. Consequently, see Section 3.3, Cumulative Impacts, for an analysis of the potential impacts of the EOBR rulemaking under options proposed in the upcoming 2010 HOS rulemaking action.

Options 2, 3, and 4 are very similar in scope: the only difference being that Option 3 includes a slightly larger motor carrier population of passenger-carrying CMVs and CMVs carrying HM as described under Option 3 in Section 2.4 and Option 4 includes all motor carriers under FCMSA's regulatory scope for HOS compliance. The only analytical difference of these Options concerns the number of potential crashes reduced. Thus, these Options will appear together in the analysis for this section to reduce repetition in the analysis.

3.2.1 Air Emissions

There are several ways that the proposed rulemaking affects air emissions. Depending on the option, the rule may simultaneously produce and prevent emissions or simply produce emissions. Some of the emissions prevented or produced come from congestion behind a CMV crash, which FMCSA has estimated in its report "Environmental Cost of CMV Crashes" (FMCSA 2004). Some of the air emissions impacts comes from the rest-time idling of trucks (referred to as "hoteling") while drivers take the mandatory HOS breaks that, before the inclusion of the EOBR device, they would forgo (and be in violation of the HOS regulations). While the different Options impact the number of reduced crashes, and the subsequent emissions from those crashes, Options 2, 3 and 4 are identical in terms of estimating the amount of additional emissions from hoteling since the estimate of sleeper-berth cabs would be the same in these populations (long-haul RODS users, which are included in all Options). The additional populations in Options 3 and 4 are not populations that would normally practice hoteling in response to complying with the HOS regulations. Thus, the emissions estimates from hoteling are applicable to Options 2, 3 and 4.

<u>OPTION 1: No-Action Alternative</u>

Without the mandatory use of EOBRs, there would be no additional emissions as a result of idling as drivers increased their compliance with the HOS regulations. However, there would not be the decrease in emissions from the decrease in crashes associated with complying improved compliance with HOS requirements. FMCSA estimates the number of crashes that could occur under the No-Action Alternative (that is, by not requiring EOBRs as outlined in the NPRM).

OPTIONS 2, 3 and 4: Mandatory EOBR Use in RODS Population, Mandatory EOBR Use in Broad CMV Population, and Mandatory EBOR Use in HOS Population

Since Options 2, 3 and 4 are essentially the same options with only the addition of the number of motor carriers, this analysis will compare all Options in the same discussion. Comparisons of the Options will appear in the tables as to make apparent the potential minor differences in the Options on the impacts to the environment.

The mandatory use of EOBRs affect air quality in two main ways: 1) from changing behavior of drivers currently violating HOS regulations, toward improved compliance that would often entail spending additional time off-duty or, often in the sleeper berth of a cab with the engine running to power climate control systems and electronics. The additional time in the sleeper berth has the potential to increase emissions, yet, the reduction in crashes (safety improvement) prevents congestion -- which reduces emissions from other highway vehicles. Note that the hoteling estimates are the same for Options 2, 3 and 4.

Emissions from Additional Idling

Table 5 below describes the potential additional amount of emissions from drivers that idle their CMVs' engines to maintain cab temperature in a comfort range during the time they are off-duty or using a sleeper berth to abide by HOS rules, rather than violating those rules by driving beyond the regulatory maximum. FMCSA estimates the out-of-service (OOS) rate for HOS violations from roadside inspections at about 4%.[5] However, these violations are a result of using targeted methods to identify most problematic carriers for roadside inspection, and therefore is likely to be higher than the OOS violation rate of the carrier population as a whole. In addition, the actual rate of unknown violations (violations that FMCSA does not catch) is lower because inspections that result in no citations are not included in the total number of inspections, which if they were, would reduce the non-compliance rate further. The rate of effectiveness of the EOBR on HOS violations was calculated to be about 40% in the regulatory analysis for this rulemaking. Thus, FMCSA estimates that, for the baseline estimate, there are 1.00% unobserved violations, and the impacts of EOBRs on this baseline is 40 percent. FMCSA requests comments on this analytical approach.

FMCSA estimates that there are about 665,000 affected tractor trailers with sleeper berths (VIUS 2002); vehicles FMCSA estimates could be used for idling while the driver is sleeping. According to some researchers, drivers who are not currently in compliance with the HOS regulations (that the EOBR is designed to help address) lose 2 work hours per week. Drivers, even with a sleeper berth, have options for not idling while they are sleeping in the sleeper berth by using an electrified truck stop, an auxiliary power unit, not idling (and forgoing heating or cooling of the cab), or spending the night in a fixed location (generally a motel, occasionally motor carrier provided sleeping quarters). Drivers and motor carriers tend to act in their best

[5] FMCSA calculated the non-compliance rate for HOS which is explained in Appendix C of the regulatory evaluation for this rule.

interest. Furthermore, a growing number of States and localities are implementing anti-idling laws. As a result, drivers will idle their CMV engines less. Thus we estimate that the percent of the time of lost work, which could include idling, to be 70%.[6] (Argonne 2000) FMCSA seeks comments on these estimates and methodologies.

Table 5. Estimates of Hoteling Time (Sleeper Berth Units=Long-Haul Tractors)							
	Tractors	**Trips**	**HOS-Related OOS Orders**	**HOS OOS Rate**	**Lost work hours**	**Percent of Lost Work Hours Idling**	**Total Hoteling Time (Hours)**
Long Haul	665,000	144,000,000					
		Trips w/o Inspections (or Citations)					
Baseline		143,720,653	1,437,207	1.00%	2	0.7	**2,012,089**
Impact from EOBR Usage		143,720,653	574,883	0.4%	2	0.7	**804,836**

From these calculations, FMCSA estimates that EOBR use will result in 804,836 hours of idling.

Next, the idling times are converted into emissions. In order to determine the amount of criteria pollutants from the idling rates shown in Table 5, FMCSA relies on the EPA Motor Vehicle Emissions Simulator (MOVES) model from the Environmental Protection Agency (EPA). This model is used throughout the transportation community to calculate emissions and is a standard model which takes drive cycles and vehicle types into consideration in order to produce its output of emission amounts. In order to estimate these emissions from idling trucks, several calculations and assumptions needed to be developed in order to extract the emissions from MOVES. This methodology is explained in Appendix A of this EA. Since the proposed rule

[6] The percentage of time spent idling under each option was estimated by constructing typical weekly schedules for drivers working at maximum capacity, estimating the ratio of idling time to driving time, and then adjusting for the percentage of operations that are not at maximum capacity. In these schedules, hours were broken down into time for loading and unloading, driving, layovers on the road, and other breaks. From these schedules, we computed the ratio of idling hours to driving hours under the assumption, based on data presented by Argonne National Laboratory (2000), that tractors idle a fixed 70 percent of non-driving hours when they are being loaded or unloaded, and during breaks and layovers during the week. (Weekend layovers were excluded from these calculations on the assumption that the trucks would not be left idling for the days in which the drivers were not inside them.) Data from the report: Argonne National Laboratory (ANL) Center for Transportation Research. Analysis of Technology Options to Reduce the Fuel Consumption of Idling Trucks. ANL/ESD-43. June 2000

would go into effect in the year 2015, and the trend in truck emissions is decreasing over time[7], the year 2015 was chosen to model emissions with the assumption that by the time full compliance came into effect, truck emission rates would be even lower. Thus, using year 2015 would provide a maximum level for analytical purposes of environmental impact. Table 6 shows the emissions released due to the additional estimated idling while hoteling in year 2015, the year that most of the population would be impacted by the proposed changes.

Table 6. Emissions From Truck Hoteling in Year 2015

Pollutant	Emission Rate Calculated from EPA MOVES[8] (kg/hr)	Baseline (2,012,089 hrs) in U.S. Tons	Impact from EOBRs (804,836 hrs) in U.S. Tons
CO	0.088820509	197.00	78.80
NOX	0.227259488	504.05	201.62
SO2	0.000065	0.14	0.06
CO2	8.959934595	19,872.65	7,949.06
PM10	0.001444358	3.20	1.28
PM2.5	0.001401075	3.11	1.24
VOC	0.054895555	121.76	48.70

Since FMCSA is trying to determine, through the NEPA process and this EA, whether the environmental impacts reach a significant level, the analysis will look at the maximum amount of emissions release, though the Agency considers it equally possible the low case would better approximate the actual amount of emissions.

[7] FMCSA calculated year 2010 in MOVES and compared emissions rates from 2015. There were lower overall numbers for each pollutant in 2015 compared to 2010. The underlying difference between 2010 and 2015 is the age of the fleet. The difference in the SOX numbers is most likely caused by the use of Ultra Low Sulfur Diesel (ULSD). In June of 2010, the sulfur content used in on-road diesel was reduced to 15 parts per million (ppm) from 500 ppm. There is also a difference of 46 percent between the 2010 and 2015 particulate matter (PM) numbers. FMCSA hypothesizes (as almost all heavy-duty diesel-fueled trucks need diesel particulate filters (DPF) to meet 2007 EPA emissions requirements) the newer model trucks probably utilize diesel oxidization catalysts (DOCs) or DPF which would reduce PM emissions by approx 50 percent in the MOVES model.

[8] See Appendix A of this EA for the methodology for determining truck idling emissions from the EPA MOVES model.

Reduction of Emissions from Crash Prevention

The safety benefits of increased adherence to the HOS rules through the use of EOBRs can be realized through a reduction of crashes, and a reduction in crash severity. This, in turn, reduces the amount of emissions from the congestion that a CMV crash directly generates. FMCSA calculated the emissions from an average CMV crash in its report entitled, "Environmental Costs of CMV Crashes," which is used to determine the emissions prevented by the rule. In the regulatory evaluation for this rule (FMCSA 2010b), FMCSA estimates that 7,627 crashes would be prevented under Option 2, 7,640 crashes would be prevented from implementing Option 3, and that Option 4 would prevent 7,727 crashes per year. These are a combination of fatal, injury, and property-damage only crashes. Thus, emissions from an "average" crash, as calculated in the "Environmental Costs of CMV Crashes" report, are used. Table 7 below shows the emissions from the average crashes from both options that would be averted if these crashes are prevented.

Table 7.
Estimated Prevented Emissions of Average[9] CMV Crashes From Option 2, 3 & 4 (rounded)
U.S. Tons of EPA Criteria Pollutants Prevented Annually by Crash Prevention

	CO	VOC	NOx	PM10	PM2.5	SO2	CO_2
Crash Reduction Emissions Option 2	**634**	**48**	**80**	**5**	**3**	**9**	**20,334**
Crash Reduction Emissions Option 3	**635**	**48**	**80**	**5**	**3**	**9**	**20,638**
Crash Reduction Emissions Option 4	**642**	**49**	**81**	**5**	**3**	**9**	**20,600**

Net National Emissions Estimate

[9] "Average" means the mid-level congestion scenario as determined in FMCSA's "Environmental Cost of CMV Crashes" report. (FMCSA 2004) Severe crashes that could include a fatality or injury would produce more congestion on a highway than a slight crash that results in property damage only. The actual amount depends on the type of crash and the current flow of traffic along the roadway that is blocked and delayed. FMCSA is working on developing a better resolution of emissions from CMV crashes but the new analysis was not complete at the time of this rulemaking.

Finally, the national-level emissions reductions expected (as a result of EOBR use) from crash reductions are subtracted from the total national-level emissions expected to be released by the additional idling from further compliance with the HOS regulations. Table 8 shows the net emissions impacts from the proposed rule compared to EPA's reported national roadway emissions for comparison of significance. Idling emissions are from hoteling, as calculated above, combined with the 3 Options to produce net estimates. Numbers in parenthesis indicate a net reduction in emissions. These emissions are national-level emissions: long-haul truck idling can occur in numerous locations around the country.

Table 8. Net Emissions Produced (or Reduced) Annually From Option 2, 3 and 4 Compared to National Average Emissions[10] in U.S. Tons in Year 2015 (rounded)

	EPA Criteria Pollutants						
	CO	**VOC**	**NOx**	**PM10**	**PM2.5**	**SO2**	**CO2**
Idling Emissions (+)	**78.8**	**48.7**	**201.62**	**1.28**	**1.24**	**0.06**	**7,949.06**
Net Emissions Opt. 2 (-)	**(555)**	**.69**	**121**	**(3.3)**	**(2.2)**	**(9)**	**(12,385)**
Net Emissions Opt. 3 (-)	**(556)**	**.61**	**121**	**(3.3)**	**(2.2)**	**(9)**	**(12,419)**
Net Emissions Opt. 4 (-)	**(564)**	**.06**	**120**	**(3.3)**	**(2.3)**	**(9)**	**(12,651)**
National Average	**42,091,928**	**3,649,969**	**5,635,009**	**178,023**	**119,049**	**91,051**	*

* EPA has not set a limit for CO2 as of this time.

As is apparent from Table 4, additional national-level emissions of VOC and NOx, generated by increased idling are very small compared to the national average emissions for all 3 options, and are relatively even for all three options. Emissions of CO, SO2 , PM2.5, PM 10, and CO2 are actually reduced due to the prevention of emissions that result from CMV crashes. Using the national average emissions as the comparison for an inventory analysis, this rulemaking will have a very small negative impact on emissions, with a very small benefit of emissions reductions. For example, CO2 emissions from *highway vehicles alone* in 2002 were over 1,464 teragrams[11], or 1,614,000,000 U.S. tons. This rulemaking's CO2 contribution is very small in comparison to even highway transportation's overall contribution. FMCSA seeks comments on this analysis.

[10] 2007 Highway vehicle emissions from EPA's National Emissions Inventory Air Pollution Emissions Trends Data available at http://www.epa.gov/ttn/chief/trends/index.html#tables. Last accessed 3/23/10. PM is counted with condensables.

[11] From Greenhouse Gas Emissions From the U.S. Transportation Sector 1990-2003. U.S. EPA. EPA 420 R 06 003 March 2006. Available at http://www.epa.gov/otaq/climate/420r06003.pdf. Last accessed 5/17/10.

3.2.2 Clean Air Act

In addition to the NEPA requirements to examine impacts on air quality, FMCSA also analyzed this proposed rule under the CAA.

FMCSA recognizes that the action taken in this rulemaking has the potential to affect emission of criteria pollutants from CMVs. FMCSA discusses the air emissions analysis in Section 3.2.1. of this EA. As discussed in Section 3.1.2, the CAA requires additional analysis to determine if this action impacts air quality. In determining whether this action conforms to CAA requirements in areas designated as nonattainment under section 107 of the CAA and maintenance areas established under section 175A of the CAA, FMCSA is required (among other criteria) to determine if the total direct and indirect emissions are below or above *de minimis* levels. In the case of this NPRM, FMCSA considers the change in emissions to be an indirect result of the rulemaking action. FMCSA is requiring drivers and motor carriers to use EOBRs which will lead to greater compliance with the HOS regulations which, directly, does not require additional emissions releases. While emissions from idling are foreseeable, under the definition of 'indirect emissions' in 40 CFR 93.152, all four criteria must be met. FMCSA does not believe the emissions of criteria pollutants or its precursors from the publication of this rulemaking meet two of the criteria (that the Agency can practically control the emissions and that the Agency has continuing program responsibility). FMCSA's authority limits its ability to require drivers to choose alternatives to idling while taking a rest period. If FMCSA had authority to control CMV emissions then the Agency could prohibit idling or require drivers to choose an alternative such as electrified truck stops and auxiliary power units, both of which reduce idling emissions. Since FMCSA lacks this jurisdiction, this action is exempt from the CAA's general conformity requirement since it would not meet the definitions of direct or indirect emissions. (See discussion of 75 FR 17254, 17260, above.) Moreover, based on our analysis, it is reasonably foreseeable that the NPRM would not significantly increase total CMV mileage, nor would it change the routing of CMVs, how CMVs operate, or the CMV fleet-mix of motor carriers.

FMCSA requests comments on this analysis.

3.2.3 Socioeconomics

The regulatory impact analysis (RIA) that accompanies this rule provides an assessment of the costs and benefits of requiring motor carriers to use electronic on-board recorders (EOBRs) to track driving and duty time [Insert RIA citation]. The Federal Motor Carrier Safety Administration (FMCSA or the Agency) is issuing a Notice of Proposed Rulemaking (NPRM to improve compliance with the Hours of Service (HOS) regulations for (49 CFR Part 395) commercial motor vehicle (CMV) drivers. EOBRs track driving time and other activities electronically, providing largely the same information currently collected on paper records of duty status (RODS).

A Final Rule on EOBRs for HOS compliance (EOBR I) was published on April 5, 2010, 75 Federal Register (FR) 17207,[12] providing the technical requirements for EOBRs and mandating their installation and use for a period of two years on all power units of carriers with recurrent HOS compliance problems, those found in a compliance review to have a 10 percent or greater violation rate (pattern violation) for any regulation in Appendix C to 49 CFR Part 385 ("1X10 Remedial Directive Carriers").[13] FMCSA determined that an approach designed to target only HOS violators would (1) be most likely to improve the safety of the motoring public on the highways in the near term, and (2) effectively utilize motor carrier and Federal and State enforcement resources.

FMCSA proposes to expand the requirement for EOBR use to a larger number of motor carriers and to require these devices to be permanently installed and utilized for tracking of drivers' HOS. The RIA examines three options for the broader EOBR mandate that differ solely on the number of carriers, drivers, and power units affected. Whereas the 1X10 Remedial Directive targeted a relatively small number of carriers, approximately 5,700 firms with 139,000 CMVs, this second EOBR rule could potentially affect the entire motor carrier industry subject to the HOS rules, about than 500,000 carriers with 4 million CMVs. The Agency proposes to implement the rule three years after the publication of a final rule; this accounts for the time needed for EOBR vendors to produce adequate numbers of the devices.

The Agency gathered cost information from publicly available marketing materials and contact with EOBR vendors. The analysis for EOBR I focused on the least expensive device determined to be compliant with the rule.[14] The Agency has chosen to base its calculations on a higher cost device in the RIA. The manufacturer of the devices used as the basis for the EOBR I is relatively small, and, although the Agency believed that a sufficient number of units for 1x10 remedial directive carriers would be available at this price from this vendor or its competitors, it did not find evidence indicating that a sufficient number of—the Agency estimates that about 2 million will be needed—these least cost units are available for a broad industry mandate. The Agency also has not found any compelling evidence or economic arguments that market forces would cause EOBR device prices to fall. The performance standards for EOBRs require manufacturers to use mature, off-the-shelf technology currently in implemented in the fleet management systems (FMS) already sold in a large, competitive market. EOBR functionality will likely be added to these devices. The Agency is receptive to comments on its analysis of the EOBR and FMS market.

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12 Final Rule, "Electronic On-Board Recorders for Hours-of-Service Compliance," Fed. Reg. 49, No. 64 (April 5, 2010): 17207-17252.

13 Appendix C, 49 C.F.R. § 385 (2010).

14 The least expensive device that satisfies the requirements of the proposed rule was found to be the RouteTracker sold by Turnpike Global, now part of Xata Corporation. Cost data are based on the use of this device with the Sprint network. See the EOBR I RIA for a complete discussion of costs of this device.

FMCSA uses a higher cost device such as the one discussed in Appendix B (Alternative Estimates of EOBR Device Costs) of the EOBR I RIA.[15] Although the manufacturer produces more expensive devices than the one evaluated in the EOBR I RIA, the higher costs of its products reflects additional functions and features unrelated to the EOBR HOS tracking feature. The Agency believes the unit considered in this analysis represents a reasonable upper limit for costs. After amortizing purchase and repair costs over time and evaluating monthly operational costs, the per-unit device costs would be slightly higher than those presented in the EOBR I RIA, but the Agency still believes that these costs are not overly burdensome to motor carriers. The Agency has found the range of device costs to be narrow: Annualized costs for the low cost device were estimated to be $525, and annualized costs for the high cost device were estimated to be $785. -Appendix E of the RIA for this rulemaking contains a more detailed discussion of EOBR device costs. Moreover, EOBRs would eliminate or significantly simplify several of the paperwork processes associated with paper RODS, and the monetized paperwork burden reduction offsets most of the device costs for motor carriers and their drivers currently using paper RODS. Appendix F of the RIA contains additional discussion of the availability and prices of EOBRs.

This analysis also evaluates the costs and benefits of motor carrier's improved compliance with the underlying HOS rules through the use of EOBRs. The Agency has updated its assessment of the baseline level of non-compliance with the HOS rules to account for changes in factors such as inflation, a decline in HOS violations that preceded the need for EOBR use, and the decline in CMV-related crashes. Included in this analysis as alternative baselines are options from the recently published NPRM for the HOS rules for property carriers. (Option 1 of the HOS NPRM is to retain the current HOS rules) [insert publication date and FR cite]. The major changes for both HOS options is to allow at most 13 hours of on-duty time within the daily driving window; limit continuous on-duty drive time to seven hours, at which point a thirty-minute off-duty or sleeper-berth period would be required; and to require at least two overnight periods per 34-hour restart. HOS Option 2, however, also reduces daily drive time from 11 to 10 hours, while HOS Option 3 retains 11 hours of drive time. To avoid confusion between the HOS options and the options for the EOBR NPRM, HOS Option 2 and HOS Option 3 are referred to as Baseline 2 and Baseline 3.

As stated, the Agency is currently considering three options for the EOBR mandate. Option 1 would be to require EOBRs for all drivers currently using paper RODS. Option 2 (often referred to as "RODS+" in the RIA) expands Option 1 to include nearly all passenger-carrying CMVs and all shipments of bulk quantities of hazardous materials, regardless of whether the drivers use paper RODS or are exempted from doing so as described under the "short-haul operations" provisions in 49 CFR 395.1(e). The Agency believes that the higher potential for injuries and fatalities in crashes involving passenger-carrying CMVs and shipments of bulk hazardous materials warrant additional safety requirements for these operations. Option 3 would include all CMV operations subject to HOS requirements.

15 Qualcomm Mobile Computing Platform (MCP) 200.

The NPRM being evaluated also proposes changes to the HOS supporting document requirements. The Agency has attempted to clarify its supporting document requirements, recognizing that EOBR records serve as the most robust form of documentation for on-duty driving periods. FMCSA neither increases nor decreases the burden associated with Supporting Documents for HOS Compliance. These proposed changes are expected to improve the quality and usefulness of the supporting documents retained. The improved quality of the supporting documents will subsequently increase the effectiveness and efficiency of the Agency's review of motor carriers' HOS records during on-site compliance reviews, thereby increasing its ability to detect HOS rules violations. The Agency is currently unable to evaluate the extent to which the proposed changes to the supporting documents requirements will lead to reductions in crashes.

The table below summarizes the analysis. The figures presented are annualized using seven percent and three percent discount rates.

Table 9: Annualized Costs and Benefits (2008$ millions)

		7 Percent Discount Rate			3 Percent Discount Rate		
		Option 1: RODS	**Option 2: RODS+**	**Option 3: All**	**Option 1: RODS**	**Option 2: RODS+**	**Option 3: All**
I	**EOBR Costs**	1,626	1,683	1,980	1,594	1,650	1,940
II	**Paperwork Savings**	1,513	1,513	1,513	1,513	1,513	1,513
III	**Net EOBR Cost (I-II)**	113	170	467	81	137	427
IV	**HOS Compliance Costs**	453	459	493	453	459	493
V	**Total Costs (III+IV)**	566	629	960	534	596	920
VI	**Safety Benefits**	1,144	1,146	1,159	1,144	1,146	1,159
VII	**Net Benefits (VI-V)**	578	517	199	610	550	239

VIII	**Baseline 2 (HOS Option 2) Net Benefits**	716	655	337	748	688	377
IX	**Baseline 3 (HOS Option 3) Net Benefits**	776	715	397	808	748	437

FMCSA has estimated that all options presented in the RIA have positive net benefits under any baseline, that is, under any version of the HOS rules. However, the greatest safety impacts of the HOS rules are seen in long-haul (LH) operations, and the inclusion of short-haul (SH) operations diminishes the net benefits of this EOBR rule. Therefore Option 3, which includes all carrier operations, results in much lower net benefits as compared to Options 1 and 2. The alternative baselines reflect changes to the HOS rules that affect only LH, RODS-using operations. For a complete description of the fiscal costs of this rule, please see the RIA for this rulemaking.

3.2.4 Public Health and Safety

This NPRM is intended to improve CMV safety through increasing use of EOBRs within the motor carrier industry that will improve their HOS compliance. The approach has three components: (1) requiring EOBRs to be used by considerably more motor carriers and drivers, and (2) requiring motor carriers to develop and maintain systematic HOS oversight for their drivers, and (3) providing additional incentives to promote EOBR use by simplifying the supporting documents requirements. FMCSA believes this approach strikes an appropriate balance between promoting highway safety and minimizing cost and operational burdens on motor carriers.

<u>OPTION 1: No-Action Alternative</u>

The No-Action Alternative would not prevent the crashes that FMCSA estimates will be eliminated through the proposed requirement for EOBRs presented in this NPRM. Thus, the estimated crashes, which are comprised of property-damage only, injuries, and fatalities, which FMCSA estimates this would prevent, would not be realized.

<u>OPTIONS 2, 3 and 4: Mandatory EOBR Use in RODS Population, Mandatory EOBR Use in Broad CMV Population, and Mandatory EBOR Use in HOS Population</u>

In its RIA for this rule, FMCSA estimates that a number of crashes for Options 2, 3 and 4 would be prevented through the use of EOBRs in the larger CMV population. These crashes result in property-damage only events, injuries, and fatalities. FMCSA estimates that the use of EOBRs

in the wider CMV community will lead to additional compliance with the HOS regulations and, subsequently, the rule will have the benefits of reducing these crashes. FMCSA discusses the benefits of crash reduction on society in the NPRM as well as in the RIA for the NPRM (which can be found in the docket for the NPRM). The following Table 10 displays the differences in the estimate number of crashes prevented with these three options. The differences come from the difference in affected motor carrier populations.

Table 10. Crashes Prevented by Option	
OPTION	Number of Crashes Prevented Annually
Option 2	7,627
Option 3	7,640
Option 4	7,727

FMCSA's primary goal is to reduce fatalities from CMV crashes. FMCSA promulgates rules to reduce CMV crashes with the intent for highway safety as the primary objective. FMCSA has found that fatigued drivers contribute to CMV crashes and that compliance with the HOS regulations reduces the potential for crashes from fatigue. For a complete discussion of this issue, the reader is referred to the preamble of the NPRM.

3.2.5 Solid Waste

This rule affects the area of solid waste generation and disposal in two main ways. The first comes from the prevention of CMV crashes. There is a benefit to the environment due to preventing the solid waste generated from the CMV crash. The second is the reduction in paper use that is expected to occur when drivers and motor carriers are no longer required to use and retain the paper RODS. This section will estimate the amount of solid waste FMCSA expects will be kept out of the waste stream as a result of this rulemaking.

<u>OPTION 1: No-Action Alternative</u>

Under the No-Action Alternative, FMCSA would not expect to see reductions in solid waste from crash reduction or reductions in paper use associated with a transition to EOBRs. As this is the baseline that the proposed actions will be compared against, the impact to the waste stream from Option 1 would be zero. There would be no increase or reduction in waste generated. Since the proposed alternative would potentially reduce solid waste, it is worth noting that choosing the No-Action Alternative may prevent the opportunity for reducing both paper and CMV-crash-generated solid waste streams.

<u>OPTIONS 2, 3 and 4: Mandatory EOBR Use in RODS Population, Mandatory EOBR Use in Broad CMV Population, and Mandatory EBOR Use in HOS Population</u>

As mentioned earlier in this section, Option 2, 3 and 4 have two ways that impact solid waste generation and disposal. The first is from the prevention of CMV crashes. There is a benefit to the environment due to preventing generation of solid waste from CMV crashes. The second is the reduction in paper use that is expected to occur when drivers and motor carriers are no longer required to keep paper RODS.

Solid Waste from CMV Crashes

For solid waste prevented due to the reduction in crashes, FMCSA calculated per-crash estimates of solid waste generation in the "Environmental Costs of CMV Crashes" report. In Table 11, the amount of solid waste prevented is estimated for the crashes that the Options in this rulemaking may prevent. The 50 percent replacement cost is for a property damage only or injury crash while the 100 percent replacement cost represents a fatal crash. The reductions for each option are shown in Table 11.

Table 11. Reduction in Solid Waste Generated Preventing Average[16] CMV Crashes for Options 2, 3 and 4 (tons, rounded)

OPTION	50% Vehicle Replacement (Non-Fatal Crash)	100% Vehicle Replacement (Fatal Crash)
2	2,875	5,751
3	2,880	5,760
4	2,913	5,826

Paper Reduction & Associated Impacts

In addition to preventing solid waste from a CMV crash, FMCSA expects another reduction in solid waste from the elimination of paper RODS. FMCSA estimates that 860 million sheets of paper per year (3.6 million RODS users x 240 RODS/yr.) will be prevented by this rulemaking. Due to the difficulties in determining the types of paper used in RODS and the amount of environmental impact per unit of paper, a quantitative analysis of the impacts of reducing this much paper use is not included. However, a narrative description is included to demonstrate the importance of paper-use reduction by this NPRM. Since Options 2, 3 and 4 all eliminate the use of paper RODS, and that number is equal, this analysis applies to all three of these options.

Paper manufacture involves many environmentally damaging steps.[17] The pulp for making paper (and any recycled paper stock if the paper contains recycled content) is derived from trees

[16] "Average" means the mid-level congestion scenario as determined in FMCSA's "Environmental Cost of CMV Crashes" report. Severe crashes which could include a fatality or injury would produce more congestion on a highway than a slight crash that may result in property damage only. The actual amount depends on the type of crash and the current flow of traffic along the roadway that is blocked and delayed.

[17] This section draws on material from "The Secret Life" series available at http://www.secret-life.org/paper/paper_environment.php#note3. Last accessed 5/18/10.

which involves cutting forests. Also, the manufacturing of paper emits a large amount of greenhouse gases and uses a large amount of water.

The paper-making industry depends heavily upon virgin wood-based fibers to make the pulp that becomes sheets of paper. Much of the wood used comes from old growth and environmentally sensitive forests around the world.[18] Forests serve two important roles: 1) as critical protectors of biodiversity by providing habitats and 2) as climate stability by serving as a source of storage for carbon.[19] Logging companies often making use of high-intensive harvesting practices such clear-cutting.

The pulp and paper manufacturers are the fourth largest industrial emitters of greenhouse gases.[20] In addition, the pulp and paper industry is very energy intensive and requires large amounts of water. The chemicals used in paper manufacturing contain chlorine compounds to bleach paper pulp. One of the more dangerous chemicals is dioxin, which studies show can cause cancer and other serious health effects.[21]

The elimination of paper RODS not only reduces the need for paper but also reduces the waste from the paper. While the RODS are initially stored for recordkeeping, at some point the documents are either recycled or sent to a landfill or incinerator. This rulemaking is expected to have a small net benefit to the waste stream from the elimination of paper RODS and a small net benefit to forests and waterways from the elimination of the production of paper RODS.

3.2.6 Hazardous Materials

FMCSA analyzes the impact of this NPRM on HM transportation since a CMV crash of an HM carrier can potentially affect the environment from the spill of HM cargo. The main impact of this rulemaking on HM spills is from the reduction of crashes expected from this NPRM.

OPTION 1: No-Action Alternative

The main impact of choosing the No-Action Alternative is that motor carriers and other highway users would not realize the benefits from the 7,627 crashes expected to be prevented from choosing Option 2. Thus, the expected releases of HM from these crashes would continue. Since there are no negative impacts on HM transportation from the adoption of the proposed regulations, there are no benefits or costs to HM transportation from choosing the No-Action Alternative.

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[18] Ibid.

[19] From "Global Climate Change Impacts in the United States: A State of Knowledge Report," U.S. Global Change Research Program, Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson, (eds.). Cambridge University Press, 2009.

[20] U.S. Energy Information Agency at http://www.eia.doe.gov/emeu/efficiency/carbon_emissions/carbon_mfg.html. Last accessed 5/18/10.

[21] For more information on the problems associated with dioxins, please see the National Institute of Health website at http://www.niehs.nih.gov/health/topics/agents/dioxins/index.cfm. Last accessed 5/18/10.

OPTIONS 2, 3 and 4: Mandatory EOBR Use in RODS Population, Mandatory EOBR Use in Broad CMV Population, and Mandatory EBOR Use in HOS Population

Spills of HM cargo can create large environmental impacts if the material spilled is particularly dangerous to the environment in which it is spilled. This rulemaking is expected to reduce average annual crashes. While HM transportation is only a small percent of overall freight transportation, the potential for an environmental impact is higher. Thus, in the "Environmental Costs of CMV Crashes," FMCSA developed rates of HM releases per average crash. Note that this is averaged over all crashes across the population, not just HM carriers. This rulemaking affects the larger CMV population, some of which transports HM. Table 12 displays the amounts of HM prevented from being spilled into the environment with the adoption of Option 2, 3 or 4.

Table 12. Hazardous Materials Spills Prevented by Reducing CMV Crashes Under Options 2, 3 and 4 (rounded)

Hazardous Material Class	Amount Prevented per Option		
	Option 2	Option 3	Option 4
1 – Explosives (lbs)	1,393	1,396	1,412
2 – Gases (gal equiv.)	2,984	2,990	3,034
3 – Flammable Liquids (gal)	20,177	20,212	20,442
4 – Flammable Solids (lbs)	463	464	469
5 – Oxidizers (lbs)	2,438	2,443	2,470
6 – Toxics (lbs)	792	793	802
7 – Radioactive (ci)	11	11	11
8 – Corrosive (gal)	1,073	1,075	1,087
9 – Miscellaneous (lbs)	2,973	2,978	3,012

FMCSA seeks comments on the analysis provided.

3.2.7 Unaffected Areas

The following areas are not expected to be significantly impacted under any of the proposed scenarios in this NPRM. It should be noted, however, that these resources may experience minor net benefits from the proposals that reduce CMV crashes. FMCSA has quantified the environmental impacts of a CMV crash. Preventing CMV crashes and related cargo spills (especially of HM), reduces congestion and subsequent air pollution and produces net positive environmental benefits.

Section 4(f) Compliance: Section 4(f) of the DOT Act (49 U.S.C. 303) requires agencies within DOT to make a special effort to preserve the natural beauty of historic sites, public parks, and recreation lands. If a transportation program, project, or activity requires the use of public land

in a public park, it must include all possible planning to minimize harm to the park or historic area. FMCSA does not expect such 4(f) properties to be impacted and consequently, no 4(f) statement needs to be prepared for this rulemaking.

Endangered Species: The Endangered Species Act of 1973 (16 U.S.C. § 1531) requires all Federal departments and agencies to seek to conserve endangered species and threatened species. The Secretary of the Interior was directed to create lists of endangered and threatened species. Endangered species designation is conferred on any plant or animal species that is in danger of extinction throughout all or a significant portion of its range. The Endangered Species Act defines a threatened species as any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Critical habitat for an endangered or a threatened species is defined as specific areas within the geographical area occupied by the species at the time it is listed that contain the physical or biological features essential to conservation of the species and that might require special management considerations or protection. Critical habitat also includes specific areas outside the geographic area occupied by the species at the time it is listed that are essential to conservation of the species.

A key provision of the Endangered Species Act for Federal activities is Section 7, Consultation. Under Section 7 of the Act, every Federal agency must consult with the Secretary of the Interior and the U.S. Fish and Wildlife Service to ensure that any agency action is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat of such species.

The proposed rulemaking is not expected to impact endangered species.

Archaeological, Cultural, and Historic Resources: The National Historic Preservation Act (16 U.S.C. §§ 470f and 470h-2(a)) establishes a national policy to preserve, restore, and maintain historic and cultural resources. The Act establishes the National Register of Historic Places as the mechanism to designate public or privately owned properties for protection. Section 106 (36 CFR 800) of the Act requires Federal agencies to "take into account" the effect of a project on any property included in or eligible for inclusion in the National Register. Section 106 prescribes the following for consideration of historic properties under NEPA: early coordination, inclusion of historic preservation issues, and actions categorically excluded under NEPA.

This rulemaking is not expected to affect any archaeological, cultural, or historic resources.

Wetlands: Executive Order 11990 (42 FR 26961, 1977), *Protection of Wetlands*, requires Federal agencies to provide leadership on and work toward minimizing the destruction, loss, and degradation of wetlands. The Order also requires agencies to preserve and enhance the natural and beneficial values of wetlands while discharging their responsibilities for acquiring, managing, using, and disposing of Federal lands.

The proposed rulemaking is not expected to affect wetlands.

Environmental Justice: FMCSA evaluated the environmental effects of this NPRM in accordance with Executive Order 12898 and preliminarily determined that there are no

environmental justice issues associated with its provisions nor any collective environmental impacts that could result from its promulgation. Environmental justice issues would be raised if there were ‘‘disproportionate’’ and ‘‘high and adverse impact’’ on minority or low-income populations.

None of the alternatives analyzed in the Agency’s initial EA, discussed under NEPA, would result in disproportionate or high and adverse environmental impacts.

Noise: FMCSA does not expect any significant impact on noise levels from this rulemaking.

3.3 CUMULATIVE IMPACTS

CEQ identifies the impacts that must be addressed and considered by Federal agencies in satisfying the requirements of NEPA. This includes permanent, temporary, indirect, and cumulative impacts.

CEQ NEPA implementing regulations define ‘cumulative impact” as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such action.” 40 CFR 1508.7 states that cumulative impacts should be evaluated along with the overall impacts analysis of each alternative. The range of alternatives considered includes not only the proposed action but all connected and similar actions that could contribute to cumulative effects. Related actions should be addressed in the same analysis. A cumulative impacts analysis involves assumptions and uncertainties. The absence of an ideal database should not prevent the completion of a cumulative effects analysis.

3.3.1 Proposed HOS Rulemaking

This section will focus on the impacts of mandatory EBOR use to a broad segment of the CMV industry under the options provided in FMCSA’s upcoming proposed HOS rulemaking. Since the EOBR impacts are reliant on what HOS regulations the device is assisting with in compliance, changes to the HOS regulations may affect the environmental impact of EOBRs.

The HOS regulations address the number of hours that a CMV driver may drive and the number of hours a CMV driver may be on duty before rest is required, as well as the minimum amount of time that must be reserved for rest. FMCSA recently proposed to change the requirements for these regulations in the NPRM [Insert Citation for HOS Rule]. FMCSA proposed the following options in the HOS NPRM:

Option 1

Option 1 is to adopt provisions of the 2008 HOS rule; i.e., make no changes to the current HOS regulations. The existing exemptions to the current HOS regulations would remain in effect.

The 2008 rule is divided into daily and multi-day provisions, which can be expressed as follows:

- Following at least 10 consecutive hours off duty, operators can drive up to 11 hours within a period of 14 consecutive hours from the start of the duty tour.
- Short-haul operators of vehicles for which a CDL is not required (generally those less than 26,000 lbs gross vehicle weight (GVW), remaining within a 150 mile radius of their normal work reporting location, may keep timecards in lieu of logbooks and may be on duty up to 16 consecutive hours two days during a seven-day work week.
- Operators can cumulatively drive or be on duty up to 60 hours over the last seven consecutive days or 70 hours over the last consecutive eight days.
- If a sleeper berth is used, the 10-hour break can be split into two periods. One period of at least eight consecutive hours must be in the sleeper berth, and a separate period of at least two consecutive hours may be in the sleeper berth or off-duty. The 11-hour driving and 14-hour duty-period limits apply, but special requirements for calculation are provided in the regulations.
- Operators who obtain at least 34 consecutive hours of off-duty time can begin a new seven-or eight-day period, over which they can drive or be on duty a cumulative total of 60 or 70 hours respectively (i.e., the seven- or eight-day "clock" is restarted by a 34-hour off-duty period).

Option 2

This option differs from Option 1 as follows:

- Following at least 10 consecutive hours off-duty, operators are limited to 10 (rather than 11) hours of driving within a period of 14 consecutive hours from the start of the duty tour.
- Operators may be on duty for only 13 hours within the 14-hour (or 16, as described below) driving window.
- Twice a week, operators may extend the driving window to 16 hours. The extension of the driving window does not increase the allowed driving or time on-duty. Thus, operators using an extension must take at least three hours off-duty during the day to extend the window to 16 hours.
- Operators may not drive if it has been more than seven hours since a rest break of at least 30 minutes.
- The 34-hour period of off-duty time required prior to a restart must include at least two periods between midnight and 6:00 AM. A driver may begin another 34-hour off-duty period no sooner than 168 hours (seven days) after the beginning of the last restart. The driver must designate whether any period of 34 hours off-duty is to be considered a restart.

Option 3

This option differs from Option 2 only in the amount of driving allowed within a duty period. Option 3 allows 11 hours, or one more hour than Option 2.

Option 4

This option differs from Option 2 only in the amount of driving allowed within a duty period. Option 4 allows only 9 hours, or one hour less than Option 2.

These various options were evaluated for environmental impacts in the accompanying EA for the HOS rule. Readers are directed to view the HOS EA for a complete background on the environmental impacts.

The impact to the environment by the EOBR rulemaking in light of these new proposals is to assure that the new HOS rules, whatever they may be decided upon in the Final Rule, are followed. This EOBR rulemaking, for the purposes of examining cumulative impacts, may change in its environmental impacts if a different set of HOS rules are adopted by the Agency. The full environmental impacts may not actually be realized in the HOS rule if full compliance, which is assumed during the development of rulemaking analysis, does not occur. Indeed, in this EA, the Agency estimates a rate of non-compliance of the HOS regulations that lead to an OOS order. This actual rate of non-compliance will change as the rule changes as well, depending on how the regulated community responds to the rule.

FMCSA would need to analyze inspection and violation data to determine non-compliance rates with the new rule to accurately assess a non-compliance rate. However, if the rate is similar to what it is today, then one could expect that the EOBR rulemaking would have similar impact on the environment under the new rules as it does presented in this EA. If the ratio of non-compliance with the new rules is similar as with current rules, then one could expect that about one or two percent of the impacts associated with the HOS rule would actually be realized with the EOBR rule in place.

In addition, the emissions rates calculated in the new HOS rulemaking are based on the EPA MOVES model with the same input criteria as used in this analysis. The vehicle-idling mix is slightly different for the HOS rule due to the broader scope of vehicles affected. The EOBR analysis, since it is looking at pulling out-of-compliance operators in to HOS compliance, uses an estimate of non-compliance which, FMCSA estimates, impacts mainly long-haul operators with sleeper berths. Consequently, minor differences in emissions rates would be expected between the HOS and this EOBR rule.

It is FMCSA's intent to reduce crashes through the promulgation of HOS rules. Consequently, FMCSA expects there to be safety benefits with the new HOS rules, and the mandatory use of EOBRs will further create compliance with the HOS rules. The reader is urged to consult the EA for the HOS rule (FMCSA 2010a).

3.3.2 EOBR Remedial Directive Rule

On April 5, 2010, FMCSA published another EOBR rulemaking focused on the population of carriers found to have a high rate of HOS violations. The rule required motor carriers that have been determined to have critical HOS violations in 10 percent or more of the RODS reviewed during a single compliance review to use EOBRs which meet the performance standards for two

years, unless the vehicles are already equipped with an automatic on-board recording device that meets current requirements for such devices. The EA for this NPRM determined that, due to the small number of carriers affected by the rule, the additional emissions from idling were negligible (FMCSA 2010). The EA did assess the benefits to safety from crash reduction and the resulting emissions prevented. The EA estimated about 950 average crashes prevented from the rulemaking and the resulting emissions as shown in Table 13.

Table 13. Estimate of Emissions Prevented from Crash Reduction (kg)

Pollutant	Regulation Option 1 (1x10 Remedial Directive Carriers)	Regulation Option 2 (2x10 Remedial Directive Carriers)
CO	71,640	9,200
VOC	5,425	697
NOx	9,054	1,163
PM10	513	66
PM2.5	390	50
SO2	1,055	135
CO2*	2,297,632	295,064

* EPA has not set a level for CO2.

Even combined with the emissions from this NPRM, the overall additional level of emissions is very small compared to national average emissions from highway vehicles as displayed in Table 4 of this EA.

3.4 CONCLUSIONS

FMCSA concludes that the rule changes would have a negligible impact on the quality of several environmental components described in this EA and therefore would not require an EIS. As indicated in the analysis above, several of the changes have the potential to produce negligible adverse and beneficial impacts on the environment. The provisions under the action do not either individually or collectively pose any significant environmental impact. Subsequently, FMCSA plans to issue a FONSI with regards to potential environmental impact of this action. FMCSA requests comments on this conclusion.

4. CONSULTATION AND COORDINATION

4.1 List of Agencies and Persons Consulted

In the course of completing the NEPA compliance process for the rulemaking, FMCSA consulted with technical experts within FMCSA that are familiar with the impact the rulemaking could have, as well as what the potential environmental consequences of those impacts could be. No other agencies were consulted in the development of this document.

4.2 List of Preparers and Reviewers

The following persons participated in the preparation of this EA:

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Education: BA, Psychology (SUNY College at Oneonta, NY). JD, MA, Environmental Law/Policy (Vermont Law School).
Experience: 18 years in the environmental field

Steven J. LaFreniere, Regulatory Ombudsman
Education: BS, Mechanical Engineering (University of Massachusetts). Certificates in Hazardous Materials Management & Site Assessment and Remediation (University of California). MS, Military Operational Art and Science (Air University)
Experience: Over 15 years of environmental restoration management

Bivan R. Patnaik, Chief, Regulatory Development Division
Education: B.S. Biology, (Virginia Commonwealth University)
M.S. Environmental Sciences, (Johns Hopkins University).
Experience: 10 years of environmental/transportation rulemaking fields

Deborah M. Freund, Senior Transportation Specialist, Vehicle and Roadside Operations Division
Education: BS, Civil Engineering; MSc, Transportation and Urban Systems (Washington University, St. Louis).
Experience: 30 years in highway transportation, including 20 years in commercial motor vehicle safety research and rulemaking.

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PUBLIC NOTICE – ALL INTERESTED PARTIES

FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION (FMCSA)
ENVIRONMENTAL ASSESSMENT
FOR
ELECTRONIC ON-BOARD RECORDERS AND
HOURS-OF-SERVICE SUPPORTING DOCUMENTS
NOTICE OF PROPOSED RULEMAKING

This Environmental Assessment (EA) was prepared in accordance with FMCSA's National Environmental Policy Act Implementing Procedures and Policy for Considering Environmental Impacts (FMCSA Order 5601.1) and complies with the National Environmental Policy Act of 1969 (Pub.L. 91-190) and the Council of Environmental Quality Regulations dated 28 November 1978 (40 CFR parts 1500-1508).

This EA serves as a concise public document to briefly provide sufficient evidence and analysis for determining the need to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI).

This EA concisely describes the rulemaking action, the need for the proposal, the alternatives, and the environmental impacts of the proposal and alternatives. This EA also contains a comparative analysis of the preferred alternative, and a list of the agencies and persons consulted during the EA preparation.

_____ _____

Date Michael M. Johnsen, Environmental Program Analyst

_____ _____

Date Larry W. Minor, Associate Admin. Program Policy and Development

In reaching my decision/recommendation on the FMCSA's action, I have considered the information contained in this EA on the potential for environmental impacts.

_____ _____

Date Anne S. Ferro, Administrator for FMCSA

APPENDIX A: EPA MOVES MODELING METHODOLOGY

EPA MOVES does not directly output emission rates by mass/time. Consequently, a methodology was developed to calculate idle time for the purposes of this evaluation.

Methodology

MOVES allows the user to obtain emissions rates by mass/vehicle miles traveled (VMT) which is consistent with its predecessor, MOBILE6.2. However, for this analysis, there is no VMT to work with so external calculations were performed after running the model to determine the rates. In addition to providing the emissions rates (mass/VMT), MOVES will also aggregate the emissions inventory and do almost all of the post processing. (This is one of the main difference between MOBILE6.2 and MOVES.) In using MOVES, the user can choose both a pre-aggregation technique and a post-aggregation technique. For both pre- and post-aggregations, the Agency chose a 24-hour (1 day) aggregation. This means that MOVES will provide a representative day's worth of emissions for each month (12 values for each pollutant) in the output.

After obtaining the output from MOVES the following steps are taken to determine emissions rate. NOX is used as the example for the analysis.

1. Obtain MOVES output – results reported as total emissions for a representative day of each month.

monthID	pollutantName	emissionQuant
1	NOX	911740
2	NOX	951010
3	NOX	975885
4	NOX	967745
5	NOX	909806
6	NOX	853651
7	NOX	807162
8	NOX	827695
9	NOX	852191
10	NOX	947085
11	NOX	976783

12	NOX	986087

MonthID = 1 (January)
emissionQuant = Total emissions for a 24-hour period in kilograms

2. Determine Emission Rate for each month by obtaining the total extended idle hours from the output database.
(emissionQuant = EmissionRate * ExtendedIdleHours) – divide by ExtendedIdleHours to get EmissionRate.

monthID	pollutantName	emissionQuant (Kg)	ExtendedIdleHours (Hr)	EmissionRate (kg/hr)
1	NOX	911740	3348690	0.272267663
2	NOX	951010	3536370	0.268922652
3	NOX	975885	3744840	0.260594578
4	NOX	967745	3896680	0.24835116
5	NOX	909806	4009270	0.2269256
6	NOX	853651	4179310	0.204256444
7	NOX	807162	4230220	0.190808516
8	NOX	827695	4280830	0.193349187
9	NOX	852191	4009290	0.212554093
10	NOX	947085	3964060	0.238917928
11	NOX	976783	3798490	0.257150341
12	NOX	986087	3675310	0.268300361

3. Compute Composite Emission Rate by weighting the monthly emission factors.

(MonthFrac = ExtendedIdleHours/Total ExtendedIdleHours)

monthID	pollutantName	emissionQuant (Kg)	ExtendedIdleHours (Hr)	EmissionRate (kg/hr)	MonthFrac	MonthWeightedEmissRate (kg/hr)
1	NOX	911740	3348690	0.272267663	0.071747352	0.019534484
2	NOX	951010	3536370	0.268922652	0.07576849	0.020375863
3	NOX	975885	3744840	0.260594578	0.080235063	0.020908823
4	NOX	967745	3896680	0.24835116	0.083488311	0.020734419
5	NOX	909806	4009270	0.2269256	0.085900608	0.019493047
6	NOX	853651	4179310	0.204256444	0.0895438	0.018289898
7	NOX	807162	4230220	0.190808516	0.090634572	0.017293848
8	NOX	827695	4280830	0.193349187	0.091718916	0.017733778
9	NOX	852191	4009290	0.212554093	0.085901036	0.018258617
10	NOX	947085	3964060	0.238917928	0.084931961	0.020291768
11	NOX	976783	3798490	0.257150341	0.081384541	0.020928063
12	NOX	986087	3675310	0.268300361	0.078745349	0.021127405
				Composite Emission Rate (NOX) =		0.234970013

(Composite Emission Rate = SUM(MonthWeightedEmissRate)

4. Compute Composite Emission Rate by weighting the monthly emission factors.

(MonthFrac = ExtendedIdleHours/Total ExtendedIdlehours)

(Composite Emission Rate = SUM(MonthWeightedEmissRate)

Input Data for MOVES Model

Output Database Server Name: localhost

Output Database Name: FMCSA_Idle_1
Time Spans:
Aggregate By: Day
Years:
2015

Months:
January
February
March
April
May
June
July
August
September
October
November
December
Days:
Weekdays
Hours:
Begin Hour: 00:00 - 00:59
End Hour: 23:00 - 23:59

Geographic Bounds:
NATION geography
Selection: null

On Road Vehicle Equipment:
Diesel Fuel - Combination Long-Haul Truck

Road Types:
Off-Network

Pollutants And Processes:
Extended Idle Exhaust Atmospheric CO2
Extended Idle Exhaust CO2 Equivalent
Crankcase Extended Idle Exhaust Carbon Monoxide (CO)
Extended Idle Exhaust Carbon Monoxide (CO)
Crankcase Extended Idle Exhaust Methane (CH4)
Extended Idle Exhaust Methane (CH4)
Crankcase Extended Idle Exhaust Non-Methane Hydrocarbons
Extended Idle Exhaust Non-Methane Hydrocarbons
Crankcase Extended Idle Exhaust Non-Methane Organic Gases
Extended Idle Exhaust Non-Methane Organic Gases

Crankcase Extended Idle Exhaust Oxides of Nitrogen
Extended Idle Exhaust Oxides of Nitrogen
Crankcase Extended Idle Exhaust Primary Exhaust PM10 - Total
Extended Idle Exhaust Primary Exhaust PM10 - Total
Crankcase Extended Idle Exhaust Primary Exhaust PM2.5 - Total
Extended Idle Exhaust Primary Exhaust PM2.5 - Total
Crankcase Extended Idle Exhaust Primary PM10 - Elemental Carbon
Extended Idle Exhaust Primary PM10 - Elemental Carbon
Crankcase Extended Idle Exhaust Primary PM10 - Organic Carbon
Extended Idle Exhaust Primary PM10 - Organic Carbon
Crankcase Extended Idle Exhaust Primary PM10 - Sulfate Particulate
Extended Idle Exhaust Primary PM10 - Sulfate Particulate
Crankcase Extended Idle Exhaust Primary PM2.5 - Elemental Carbon
Extended Idle Exhaust Primary PM2.5 - Elemental Carbon
Crankcase Extended Idle Exhaust Primary PM2.5 - Organic Carbon
Extended Idle Exhaust Primary PM2.5 - Organic Carbon
Crankcase Extended Idle Exhaust Primary PM2.5 - Sulfate Particulate
Extended Idle Exhaust Primary PM2.5 - Sulfate Particulate
Crankcase Extended Idle Exhaust Sulfur Dioxide (SO2)
Extended Idle Exhaust Sulfur Dioxide (SO2)
Extended Idle Exhaust Total Energy Consumption
Crankcase Extended Idle Exhaust Total Gaseous Hydrocarbons
Extended Idle Exhaust Total Gaseous Hydrocarbons
Crankcase Extended Idle Exhaust Volatile Organic Compounds
Extended Idle Exhaust Volatile Organic Compounds

Rate of Progress:

Rate of Progress calculations are disabled