PUBLIC NOTICE – ALL INTERESTED PARTIES

HOURS OF SERVICE (HOS) OF DRIVERS

FINAL ENVIRONMENTAL ASSESSMENT

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

Washington, DC

Contact: Brian Dahlin
Chief, Regulatory Evaluation Division
U.S. Department of Transportation
Federal Motor Carrier Safety Administration
1200 New Jersey Ave, SE
Washington, DC 20590-0001
202-366-2551

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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

ANPRM	Advanced Notice of Proposed Rulemaking
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMV	Commercial motor vehicle
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DOC	Diesel oxidization catalyst
DOT	Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FMCSR	Federal Motor Carrier Safety Regulations
FONSI	Finding of No Significant Impact
GDP	Gross Domestic Product
GHG	Greenhouse gas
HDDV	Heavy-duty diesel vehicle
HM	Hazardous material
HMIR	Hazardous Material Incident Report
MAP-21	Moving Ahead for Progress in the 21st Century Act
MMT	Million Metric Tons
MOVES	Motor Vehicle Emissions Simulator
NAAQS	National Ambient Air Quality Standards
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO	Nitric oxide
NO_x	Oxides of nitrogen
NO_2	Nitrogen dioxide
NPRM	Notice of Proposed Rulemaking
OMB	Office of Management and Budget
Pb	Lead

PM	Particulate Matter
$PM_{2.5}$	Particulate Matter less than 2.5 micrometers in diameter
PM_{10}	Particulate Matter less than 10 micrometers in diameter
ppb	parts per billion
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RIA	Regulatory Impact Analysis
RODS	Record of Duty Status
SCE	Safety Critical Events
SIP	State Implementation Plan
SO_x	Sulfur oxides
SO_2	Sulfur dioxide
$\mu g/m^3$	micrograms per cubic meter
U.S.C.	United States Code
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

INTRODUCTION

The Federal Motor Carrier Safety Administration (FMCSA or Agency) was established within the United States Department of Transportation (DOT) on January 1, 2000, pursuant to the Motor Carrier Safety Improvement Act of 1999 (Pub. L. 106–159). The primary mission of FMCSA is to reduce crashes, injuries, and fatalities involving large trucks and buses. FMCSA regulates drivers of commercial motor vehicles (CMVs) through its Hours-of-Service (HOS) regulations. This final Environmental Assessment (EA) addresses potential environmental effects that could result from the final FMCSA HOS regulations (Final Action). Any potential environmental consequences thereof are discussed pursuant to the National Environmental Policy Act (NEPA) and other relevant legal authorities.

This EA serves as a concise public document with sufficient analysis to determine if the Final Action warrants preparation of an environmental impact statement (EIS), issuance of a Finding of No Significant Impact (FONSI), or withdrawal of the final rule. This document primarily examines impacts that could result from implementation of the final rule and compares such impacts to the No Action Alternative.

FINAL ACTION

FMCSA revises the hours of service (HOS) regulations to provide greater flexibility for drivers subject to those rules without adversely affecting safety. The Agency: (1) expands the short-haul exception to 150 air-miles and allows a 14-hour work shift to take place as part of the exception; (2) expands the driving window during adverse driving conditions by up to an additional 2 hours; (3) requires a 30-minute break after 8 hours of driving time (instead of on-duty time) and allows an on-duty/not driving period to qualify as the required break; and (4) modifies the sleeper berth exception to allow a driver to meet the 10-hour minimum off-duty requirement by spending at least 7, rather than at least 8, hours of that period in the berth with any balance of the 10-hour minimum off-duty period spent inside or outside of the berth and provides that neither qualifying period counts against the 14-hour driving window.

PURPOSE AND NEED FOR ACTION

The purpose of the final rule is to revise the FMCSA HOS regulations and provide greater flexibility for drivers subject to those rules without adversely affecting safety. The final HOS rule would afford drivers increased flexibility to better adjust their driving schedules in cases of unanticipated weather events, fatigue, and traffic congestion.

ALTERNATIVES

No Action Alternative/Current Rule

The current regulations require:

1. Under the short-haul exception available to certain CMV drivers, drivers' maximum on-duty period is fixed at 12 hours and a driver may operate within 100 air-miles (115.08 statute miles) of the normal work reporting location;
2. Under the "adverse driving conditions" exception, truck drivers may extend their total driving time by 2 hours, from 11 total hours up to 13 total hours, and passenger-carrying CMV drivers may extend their total driving time by 2 hours, from 10 total hours up to 12 total hours; however, the 14-hour maximum driving window for property carriers and 15-hour maximum driving window for passenger carriers remains in place;
3. Drivers of property-carrying CMVs must take at least 30 minutes off-duty no later than 8 hours after coming on-duty if they wish to continue driving after the 8th hour;
4. A driver may obtain the equivalent of 10 consecutive hours off-duty if he/she has a period of at least 8 hours in the sleeper-berth and a second period of at least 2 hours either off-duty or in the sleeper-berth. Compliance is calculated from the end of the first two periods.

Final Action/Preferred Alternative

The Final HOS rule would:

1. Change the short-haul exception available to certain CMV drivers by lengthening the drivers' maximum on-duty period from 12 to 14 hours and extending the limit within which the driver may operate from 100 air-miles (115.08 statute miles) to 150 air-miles (172.6 statute miles);
2. Expand upon the adverse driving conditions definition and modify the exception by extending by 2 hours (from 14 to 16 hours for property carriers and from 15 to 17 hours for passenger carriers) the maximum window during which driving is permitted;
3. Increase flexibility for the 30-minute break rule by tying the break requirement to 8 hours of driving time without an interruption of at least 30 minutes not driving satisfied by either an on-duty, or off-duty break; and,
4. Modify the sleeper-berth exception to allow drivers to split their required 10-hours off-duty into two periods, one of at least 7 consecutive hours in the sleeper-berth and the other of not less than 2 consecutive hours, either off-duty or in the sleeper-berth, provided the two periods total at least 10 hours; neither period counts against the driver's 14-hour driving window.

SUMMARY OF ENVIRONMENTAL IMPACTS

Table 1 provides an overview of potential impacts anticipated under the Final Action and No Action alternatives by category of impacts. Section 3 of this EA addresses these potential impacts in more detail, including discussion of public health and safety with respect to each impact category.

Table 1. Summary of Anticipated Environmental Impacts by Alternative

Impact Category	No Action Alternative	Preferred Alternative
Air Quality and Clean Air Act	There would be no change from the baseline conditions; therefore, no impacts are expected.	FMCSA expects that changes in vehicle miles traveled (VMT), if any, to be minimal, based on economic analysis completed as part of the HOS regulatory impact analysis (RIA). Any change in the amount of emissions related to potential engine idling or driving time that could result from implementation of the final rule is unknown. However, any changes are not expected to result in significant impacts under NEPA.
Socioeconomics	There would be no change from the baseline conditions; therefore, no impacts are expected.	FMCSA anticipates quantifiable socioeconomic cost savings to include reductions in opportunity costs to motor carriers, and qualitative cost savings to drivers. However, any changes are not expected to result in significant impacts under NEPA.
Solid Waste	No anticipated effects.	No anticipated effects.
Hazardous Materials	No anticipated effects.	No anticipated effects.
Energy Supply	No anticipated effects.	No anticipated effects.
Noise	No anticipated effects.	No anticipated effects.
Truck Parking Supply	No anticipated effects.	No anticipated effects.
Section 4(f) Resources	No anticipated effects.	No anticipated effects.
Endangered Species	No anticipated effects.	No anticipated effects.
Wetlands	No anticipated effects.	No anticipated effects.
Historic Properties	No anticipated effects.	No anticipated effects.

1. PURPOSE AND NEED

1.1 INTRODUCTION

In accordance with NEPA, the Council on Environmental Quality (CEQ) implementing regulations (40 CFR 1500 – 1518), U.S. DOT Order 5610.C (September 18, 1979, as amended on July 13, 1982, and July 30, 1985), entitled *Procedures for Considering Environmental Impacts,* and the FMCSA's NEPA Implementing Procedures and Policy for Considering Environmental Impacts (FMCSA Order 5610.1, March 1, 2004, 69 FR 9680), FMCSA prepared this EA to review potential environmental impacts that could result from implementation of the final HOS regulations. In its final rule, FMCSA amends its HOS regulations to improve driver flexibility, efficiency, and reduce costs without compromising the safety of drivers and members of the public. The Agency does not anticipate that implementation of the final rule would result in significant safety impacts. None of the provisions allows increases in driving time while affording drivers the flexibility to take breaks without penalty and when needed, rather than imposing strict requirements, as under the existing rule.

The HOS regulations were identified by FMCSA as an area for potential modification following the required use of electronic logging devices (ELDs) to log time (see ELD rulemaking; 80 FR 78292, Dec. 16, 2015). The ELD regulations generally require drivers of CMVs to electronically record compliance with HOS regulations rather than use paper records of duty status (RODS).

FMCSA published an Advance Notice of Proposed Rulemaking (ANPRM) in the Federal Register on August 23, 2018 (83 FR 42631), seeking information regarding costs and benefits of its current HOS regulations. The ANPRM asked for public comment on four subject areas: short-haul operations, the adverse driving conditions exception, the 30-minute break, and the sleeper-berth provision. The ANPRM also sought public comment on two petitions for rulemaking, one from the Owner-Operator Independent Drivers Association (OOIDA) and one from TruckerNation.org (TruckerNation).[1]

The OOIDA petition, received on February 13, 2018, requested that FMCSA amend its HOS rules and allow drivers to take a rest break once per 14-hour duty period for up to three consecutive hours if a driver is off-duty. The TruckerNation petition asked FMCSA to revise its prohibition against driving beyond the 14th hour shift limit and allow drivers to use multiple off-duty periods of three hours or longer in lieu of 10 consecutive hours off-duty. Both petitioners requested that FMCSA eliminate the 30-minute break requirement. The ANPRM sought comment on both petitions.

FMCSA published a NPRM on August 22, 2019 (84 FR 44190). The NPRM requested comment on five topics: (1) altering the short-haul exception to the RODS requirement available to certain CMV drivers; (2) modifying the adverse driving conditions exception; (3) increasing flexibility for the 30-minute break rule by requiring a break after 8 hours of driving time (instead of on-duty time) and allowing on-duty/not driving periods to qualify as breaks; (4) modifying the

[1] These petitions are included in the docket for this rulemaking (FMCSA-2018-0248) available at: https://www.regulations.gov/docket?D=FMCSA-2018-0248.

sleeper-berth exception to allow a driver to spend a minimum of 7 hours in the berth combined with a minimum 2-hour off-duty period, provided the combined periods total 10 hours, and allowing neither period to count against the maximum 14-hour driving window; and (5) allowing one off-duty break that would pause a truck driver's 14-hour driving window. Thereafter, the Agency held two public listening sessions.

This EA is based, in part, on FMCSA's economic analysis included in the Agency's RIA conducted for the final rule and available in the docket for this rulemaking.

1.2 BACKGROUND

The current HOS rules governing property-carrying CMVs limit drivers to 11 hours of driving time within a 14-consecutive-hour-period following 10 consecutive hours off-duty (except that drivers who use sleeper-berths may combine 2 hours of off-duty time with 8 consecutive hours in the sleeper-berth). Drivers must take at least 30 minutes off-duty following 8 hours on-duty if they wish to continue driving after the 8th hour. Drivers must record their on- and off-duty time in RODS previously captured in paper "logs" but today (with certain exceptions) recorded through ELDs. Drivers may not drive after 60 hours on-duty in 7 consecutive days (60-hour rule), or 70 hours in 8 days (70-hour rule); they may restart the 60/70-hour "clock" after 34 consecutive hours off-duty, or 24 hours for certain segments of the industry. The current rules also provided exceptions applicable to both drivers of property-carrying and passenger-carrying CMVs, including availability of a two-hour extension of driving time in the event of adverse driving conditions and the short-haul exception, whereby drivers who travel no further than a 100 air-mile radius from their starting location and return to that location and complete their work day within 12 hours can rely on time records in lieu RODS and are not subject to the supporting documents requirements under the HOS rules. Drivers of property-carrying CMVs who would otherwise be subject to the 30-minute break provision also avoid this requirement under the short-haul exception.

The DOT periodically reviews its regulations to ensure they continue to meet the needs for which they were originally intended and remain justified as stipulated in several executive orders. The HOS regulations were identified as an area for potential modification due to changes in logging HOS brought about by the implementation of the ELD rule.

Following publication of the ANPRM, FMCSA held a series of public listening sessions in Dallas, Texas (August 24, 2018); Reno, Nevada (September 24, 2018); Joplin, Missouri (September 28, 2018); Orlando, Florida (October 2, 2018); and Washington, DC (October 10, 2018).[2]

[2] Listening sessions were announced in the *Federal Register* at 83 FR 42630, August 23, 2018; 83 FR 45204, September 6, 2018; 83 FR 47589, September 20, 2018; 83 FR 48787, September 27, 2018, and 83 FR 50055, October 4, 2018. The listening session scheduled for September 14, 2018 in Washington, DC was canceled and rescheduled. Live stream of listening sessions are available at: https://www.fmcsa.dot.gov/mission/policy/public-listening-sessions-hours-service (accessed December 6, 2018).

FMCSA published a NPRM on August 22, 2019 (84 FR 44190) and held additional public listening sessions in Dallas, TX (August 23, 2019)[3] and Washington, DC (September 17, 2019).[4,5]

1.3 PURPOSE AND NEED FOR ACTION

The purpose of the Final Action is to revise the FMCSA HOS regulations. The action is needed to provide greater flexibility for drivers subject to the HOS rules without adversely affecting safety. The final HOS rule will afford drivers added flexibility to better adjust their driving schedules in cases of unanticipated weather events, fatigue, and traffic congestion.

1.4 INCOMPLETE AND UNAVAILABLE INFORMATION

The CEQ regulations implementing NEPA (40 CFR 1502.22) require an agency completing its environmental review to indicate when information is incomplete or unavailable. Statements to that effect have been included in this EA, where appropriate.

This EA contains the best available information for each impact area discussed by reporting the most conservative information consistent in methodology or discount rate. In its draft EA, FMCSA requested comments regarding the data utilized and the data that is unavailable. It also requested data to address some of the gaps identified. No comments were submitted in response to the draft EA.

1.5 SCOPE OF ANALYSIS

This EA analyzes the potential environmental consequences associated with the Final Action and No Action alternatives. This assessment has been completed to determine if any potential impacts of implementing the revised HOS rule would rise to the level of significant. The resource categories discussed in detail include air quality and socioeconomics. Driver and public health and safety are assessed under air quality and socioeconomics.

Impacts from noise or to energy supply, solid waste, hazardous materials, section 4(f) resources, endangered species, wetlands, or historic properties are not anticipated and are only briefly discussed. Truck parking supply issues are also not anticipated to be impacted due to the rule change. Potential cumulative impacts that could result from other past, present, and reasonably foreseeable future actions are reviewed.

[3] The DC listening session available for viewing at: https://youtu.be/MHo6OjoBAfk (accessed January 3, 2020)
[4] The Dallas listening session available for viewing at: https://www.youtube.com/watch?v=Ba6sxSgRWA0 (accessed January 3, 2020).
[5] Transcripts of Dallas and DC listening sessions are available at: https://www.regulations.gov/docket?D=FMCSA-2018-0248 (accessed January 3, 2020).

2. DESCRIPTION OF ALTERNATIVES

2.1 OVERVIEW OF ALTERNATIVES

This EA considers and assesses the potential environmental consequences of the No Action and the Preferred alternatives. Below we present the baseline (the No Action Alternative), the Final Action, and a comparison between both alternatives.

2.2 NO ACTION ALTERNATIVE: EXISTING REGULATIONS

1. Under the short-haul exception available to certain CMV drivers, drivers' maximum on-duty period is fixed at 12 hours and a driver may operate within 100 air-miles (115.08 statute miles);
2. Under the "adverse driving conditions" exception, truck drivers may extend their total driving time by 2 hours, from 11 total hours up to 13 total hours, and passenger-carrying CMVs may extend their total driving time by 2 hours, from 10 total hours up to 12 total hours; however, the 14-hour maximum driving window for property carriers and 15-hour maximum driving window for passenger carriers remains in place;
3. Drivers of property-carrying CMVs must take at least 30 minutes off-duty no later than 8 hours after coming on-duty if they wish to continue driving after the 8th hour unless they are operating under the short-haul exception; and,
4. A driver of a property-carrying CMV may obtain the equivalent of 10 consecutive hours off-duty if he/she has a period of at least 8 hours in the sleeper-berth and a second period of at least 2 hours either off-duty or in the sleeper-berth. Compliance is calculated from the end of the first two periods.

2.3 SUMMARY OF FINAL ACTION

Overall, the Final Action will improve efficiency by providing flexibility in four areas, allowing operators to shift their work and drive time to mitigate the effect of certain variables (e.g., weather, traffic and detention times). Specifically, the Agency: (1) expands the short-haul exception to 150 air-miles and allows a 14-hour work shift to take place as part of the exception; (2) expands the driving window during adverse driving conditions by up to an additional 2 hours; (3) requires a 30-minute break after 8 hours of driving time (instead of on-duty time) and allows an on-duty/not driving period to qualify as the required break; and (4) modifies the sleeper berth exception to allow a driver to meet the 10-hour minimum off-duty requirement by spending at least 7, rather than at least 8, hours in the berth with any balance of the 10-hour minimum off-duty period spent inside or outside of the berth and provides that neither qualifying period counts against the 14-hour driving window.

2.4 COMPARISON OF PREFERRED AND NO ACTION ALTERNATIVES

The Final Action would not change <u>all</u> the provisions in the existing regulations. A comparison of the specific provisions that <u>would</u> change and their impacts are shown below (see Table 2).

1) Short-Haul Exception:

   a) Current HOS Rule: Drivers are not required to prepare RODS or use an ELD if they return to their starting work reporting location and are released from work within 12 consecutive hours. Drivers operating under this provision are permitted a 12-hour workday in which to drive up to 11 total hours (in the case of passenger-carrying CMVs, 10 total hours) and the motor carrier must maintain time records reflecting certain information. Drivers are limited to driving within a 100 air-mile radius of their normal work reporting location and required to begin and end their workday in the same location.

   b) Final HOS Rule: Drivers would still not be required to prepare RODS or use an ELD. However, the maximum allowable workday under the short-haul exception would be extended from 12 to 14 hours. The final rule would also extend the existing air-mile radius restriction from 100 air-miles to 150 air-miles. Drivers would continue to be limited to 11 hours of actual driving time (in the case of passenger-carrying CMVs, 10 total hours) and all driving would need to be completed within 14 hours from the start of the workday. Drivers would be required to begin and end their workday in the same location.

2) Adverse Driving Conditions Provision:

   a) Current HOS Rule: The current rule allows 2 additional hours of driving time for "adverse driving conditions" due to snow, sleet, fog, other adverse weather conditions or unusual road and traffic conditions, not apparent at the time of dispatch. Although the rule allows truck drivers up to 13 hours of driving time under adverse conditions, instead of the normal 11 hours, it does not provide a corresponding extension of the 14-hour driving window. Similarly, the current rule allows passenger-carrying CMV drivers up to 12 hours of driving time under adverse driving conditions without a corresponding extension of the 15-hour driving window.

   b) Final HOS Rule: Under the final rule, a driver is allowed up to a 2-hour extension of the 14-hour driving window (property carriers) within which to complete up to 13 hours of driving, or the 15-hour driving window (passenger carriers) within which to complete up to 12 hours of driving if a driver encounters adverse driving conditions. The maximum driving hours under this exception are not changed. The final rule modifies the definition of adverse driving conditions to mean snow, ice, sleet, fog, or other adverse weather conditions or unusual road and traffic conditions that were not known, or could not be reasonably known, to a driver immediately prior to beginning the duty day or immediately before beginning driving after a qualifying rest break or sleeper-berth period or to a motor carrier immediately prior to dispatching the driver; and provides not more than 2 additional hours to complete a run or reach a place offering safety.

3) 30-minute Break Provision:

a) Current HOS Rule: Currently, drivers of property-carrying CMVs, except those operating under limited exceptions and exemptions (e.g., the short-haul exceptions), are subject to the 30-minute break requirement. Under this requirement, driving is not permitted if more than 8 hours have passed since the end of the driver's last off-duty or sleeper-berth period of at least 30 minutes. This requirement results in drivers being required to take 30 minutes of off-duty time 8 hours after coming on-duty, regardless of the number of hours driven.

b) Final HOS Rule: The final rule would prohibit driving for more than 8 consecutive hours without at least a 30-minute change in duty status. This would allow 30 minutes of non-driving status (whether on-duty or off-duty), such as loading or unloading a truck or stopping for fuel, to count as a break. The changes would increase flexibility by reducing the number of drivers affected by the break requirement (i.e., those drivers that work for 8 hours but do not drive for 8 consecutive hours would not be required to take a rest break), and reducing the impact on those still required to take a break (i.e., allowing on-duty/non-driving time to satisfy the break requirement). The rule does not change available driving time and maintains the requirement to take a 30-minute break from driving.

4) Sleeper-Berth Provision:

a) Current HOS Rule: Drivers qualifying for the HOS sleeper-berth provision must, before driving, accumulate the equivalent of at least 10 consecutive hours off-duty. The equivalence refers to at least 8 but less than 10 consecutive hours in a sleeper-berth, and a separate period of at least 2 but less than 10 consecutive hours either in the sleeper-berth or off-duty, or any combination thereof.

b) Final HOS Rule: The final rule would modify the sleeper-berth exception for property carriers to allow a driver to satisfy the required 10 hours off-duty by taking two off-duty periods, provided that neither period is less than 2 consecutive hours and one period consists of at least 7 hours in the berth. This sleeper-berth exception would provide drivers greater operational flexibility, while affording the opportunity for the driver to obtain the necessary amount of restorative sleep. Drivers using this option would be required to obtain one "anchor" rest period of at least 7 consecutive hours paired with another period of at least 2 hours, provided that a total of 10 hours of off-duty time is achieved. When paired, neither qualifying period would count against the 14-hour driving window.

Table 2. Summary of Regulatory Requirements for No Action and Preferred Action

Provisions of Alternatives	No-Action	Preferred Action
Short-Haul Exception	Drivers under the HOS short-haul exception are not required to maintain RODS, providing they return to their starting work location and are released from work after 12 hours. Drivers must stay within 100 air-miles of their reporting location.	Extends the short-haul exception from 12 to 14 hours after coming on-duty. Extends the air-miles from reporting location to 150 air-miles. Applies to CMV property-carrying and passenger carrying drivers.
Adverse Driving Conditions Exception	During adverse driving conditions, drivers cannot drive more than 2 hours longer than the maximum driving allowed within the 14-hour (property carriers) or 15-hour (passenger carriers) driving window.	Modifies the definition of adverse driving conditions. Allows a 2-hour extension of the maximum driving window to complete a run or to reach a place offering safety. Also applies to passenger carriers.
30-minute Break Provision	30-minute break required 8 hours after coming on-duty and break must be off-duty. Subject to exceptions.	30-minute break is required after 8 consecutive hours of driving and break may be either off or on-duty. Subject to exceptions.
Sleeper-Berth Provision	A driver accumulates the equivalent of 10 consecutive hours off-duty if at least 8 hours are spent in the sleeper-berth and a second period of at least 2 hours is either off-duty or in the sleeper-berth. Compliance is calculated from the end of the first two periods.	Modifies the sleeper-berth provision for property carriers to allow the driver to accumulate the equivalent of 10 consecutive hours off-duty if at least 7 hours are spent in a sleeper-berth, and a second period of not less than 2 hours is either off-duty or in a sleeper-berth, with neither period counting against the driver's 14-hour driving window. Compliance is calculated from the end of the first two periods.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

The CEQ NEPA regulations (40 CFR 1501.7(a)(3)) require an agency to eliminate from detailed study the issues which are not deemed significant during scoping. In the RIA for the Preferred Action, FMCSA considered alternatives that would involve: (1) requiring an off-duty 30-minute break following 8 hours of driving; (2) eliminating the 30-minute break requirement entirely; (3) continuing to allow an 8/2 sleeper-berth option, but excluding the shorter rest period from the calculation of the 14-hour driving window; (4) allowing both an 8/2 and a 7/3 sleeper-berth option, but continuing to include the shorter rest period in the calculation of the 14-hour driving window; (5) allowing drivers to maintain eligibility for the short-haul exception if they return to their work reporting location within 14 hours, but maintaining the current air-mile radius; (6) allowing one off-duty break of at least 30 minutes but not more than 3 hours; and (7) a "no-action" alternative for the adverse driving condition provision. These alternatives generally would be more restrictive, reduce or eliminate any cost savings associated with the proposal, and would not provide any additional safety or environmental benefits relative to the Preferred Alternative and were thus eliminated from further consideration.

In response to comments received on the NPRM, FMCSA eliminated the "Split-Duty Provision" originally proposed in the notice and evaluated in the draft EA. This would have allowed one off-duty pause of at least 30 minutes but not more than 3 hours in a truck driver's 14-hour driving window. However, rather than adding flexibility, many commenters expressed concern that drivers would be pressured by supervisors or others to use the proposed break to add time to their workday.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

In accordance with the 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 significant issues. Through the rulemaking process, as well as in accordance with CEQ, DOT, and FMCSA environmental guidelines and other environmental statutes, laws, and Executive Orders for NEPA review and analysis, FMCSA determined the scope of significant environmental issues to be analyzed in detail. These issues are reviewed below.

In accordance with Appendix 18 of FMCSA Order 5610.1, "Special Areas of Consideration When Implementing NEPA," FMCSA considered whether the Final Action would impact the range of resources considered under NEPA. FMCSA finds that impacts from noise or to truck parking supply, endangered species, historic properties and cultural resources, wetlands, and section 4(f) resources, solid waste and hazardous materials are unlikely to result from the rule changes.

Based on its expertise and economic analysis completed in the RIA for the Final Action, FMCSA evaluates air quality and socioeconomics in detail. Public and driver safety are each considered under these categories of impacts.

3.1 UNAFFECTED RESOURCES AND IMPACT CATEGORIES

NEPA limits the scope of environmental analysis to impacts that are "reasonably foreseeable." Moreover, "where an agency is unable to prevent a certain effect due to its limited statutory authority over the relevant actions, the agency cannot be considered a legally relevant 'cause' of the effect. Hence, under NEPA . . . the agency need not consider these effects…" *Department of Transportation vs. Public Citizen,* 541 U.S. 752, 770 (June 7, 2004). Impacts to the following category of resources are not reasonably foreseeable and are thus only briefly discussed below.

Section 4(f) Resources: Section 4(f) of 49 U.S.C. 303 requires DOT agencies to avoid impacts to historic sites, public parks, and recreation lands if an alternative is available. 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.

Implementation of the final rule is not likely to affect 4(f) resources. Any impacts to 4(f) properties are not reasonably foreseeable.

Endangered Species: The Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531) requires all Federal departments and agencies to seek to conserve threatened and endangered species. The Secretary of the Interior created and maintains the 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. ESA 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 ESA for Federal activities is Section 7 Consultation. Under Section 7 of the ESA, every Federal agency must consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, as appropriate, 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 U.S. Fish and Wildlife Service has primary responsibility to oversee the recovery of terrestrial and freshwater organisms, while National Marine Fisheries Service has responsibility to oversee the recovery of marine and anadromous species.

The Final Action is not expected to impact threatened or endangered species or their designated critical habitat. Therefore, no consultation is required.

Archaeological, Cultural, and Historic Resources: The National Historic Preservation Act of 1966 (54 U.S.C. 300101 et seq.) and its implementing regulations (36 CFR part 800) establish a national policy to consider effects to historic properties eligible for listing or listed on the National Register of Historic Places.

The Final Action is not anticipated to affect archaeological, cultural resources, or historic properties.

Wetlands: Executive Order 11990 (42 FR 26961), *Protection of Wetlands*, May 1977, requires Federal agencies to provide leadership on and work toward minimizing the destruction, loss, and degradation of wetlands. This 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 Final Action is not anticipated to affect wetlands.

Noise: The Noise Control Act of 1972 (42 U.S.C. 4901) establishes a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. The Noise Control Act directs Federal agencies to comply with applicable Federal, state, interstate, and local noise control regulations.

FMCSA does not anticipate impacts to noise levels from the Final Action.

Solid Waste: According to the Resource Conservation and Recovery Act (RCRA) regulations, the definition of a solid waste encompasses: (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 the regulatory classification of solid waste depending on the type of material and recycling method. For example, scrap metal from CMV crashes 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.

CMV crashes can generate solid waste. 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 Final Action is not anticipated to affect incidences of crashes.

Hazardous Materials (HM): The Hazardous Materials Transportation Act (49 U.S.C. 5101 et seq.) regulates hazardous materials transportation in the United States. 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 an HM under federal HM transportation law, can also adversely impact the environment, including driver health given the potential for CMV operator exposure during a crash involving HM.

The Final Action is not anticipated to affect incidences of crashes.

Energy Supply:

Energy supply refers to the total energy use by CMVs including fuel consumption.

While minor increases and decreases in fuel use could result from the Final Action, these changes are minor compared to the current total energy use by CMVs. Accordingly, FMCSA does not consider these effects to be significant.

3.2 AIR QUALITY AND CLEAN AIR ACT REQUIREMENTS

3.2.1 Affected Environment

The principal Federal legislation that considers air quality is the Clean Air Act (CAA) of 1970 (as amended in 1977 and 1990) (42 U.S.C. 7401 et seq). The intent of the CAA is to preserve air quality and protect public health, welfare, and the environment from the effects of air pollution.

The CAA establishes a set of National Ambient Air Quality Standards (NAAQS) for the following "criteria" pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), 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 with an ample margin of safety. 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.

The health effects of the six Federal criteria pollutants are briefly summarized below.

Carbon Monoxide (CO) is a colorless, odorless, and poisonous gas produced by incomplete burning of carbon in fuels. Motor vehicles (primarily gas producing but also diesel) 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 (Pb) is a heavy metal and neurotoxin. 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. Since the prohibition of lead in motor vehicle fuels, highway transportation sources are no longer a major source of lead pollution.

Nitrogen Dioxide (NO_2) is one of several reactive gases formed as oxides of nitrogen or nitrogen oxides (NOx). *NO_2* emissions come from the burning of fossil fuels emitted by vehicles and power plants. *NO_2* can react with other NOx, water and oxygen to form acid rain. 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 that can affect both terrestrial and aquatic ecosystems.

Ozone (O_3) is an inorganic molecule that appears as a bluish gas; it is a photochemical oxidant and major component of smog. Ozone is not emitted directly into the air but 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. 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.

Particulate Matter (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, NO_2 and VOCs. Particulate matter is formed as a result of complex chemical reactions and are a leading source of smog. 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.

Sulfur Dioxide (SO_2) is a toxic gas that results largely from stationary sources such as powerplants. However, diesel fuel also contributes to SO_2 emissions. In 2006, EPA created stringent regulations to reduce the amount of SO_2 in diesel fuels. This has had a positive impact in reducing SO_2 from CMVs. High concentrations of SO_2 can affect breathing and aggravate existing respiratory and cardiovascular disease. SO_2 is also a primary contributor of acid rain which causes the acidification of lakes and streams and can damage trees, crops, and erode historic buildings, and statues (See Table 3 for a summary of the above criteria pollutants).

Table 3. NAAQS for Criteria Pollutants

Pollutant	Type of Standard	Averaging Period	Level	Form
Carbon Monoxide (CO)	Primary	8-hour	9 ppm	Not to be exceeded more than once per year
	Primary	1-hour	35 ppm	
Lead (Pb)	Primary and Secondary	Rolling 3-month average	0.15 μg/m^3 (1)	Not to be exceeded
Nitrogen Dioxide (NO_2)	Primary	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and Secondary	Annual	53 ppb (2)	Annual mean
Ozone (O_3)	Primary and Secondary	8-hour	0.075 ppm (3) (2008 standard)	Annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years
Particulate Matter ($PM_{2.5}$)	Primary	Annual	12 μg/m^3	Annual mean, averaged over 3 years
	Secondary	Annual	15 μg/m^3	Annual mean, averaged over 3 years
	Primary and Secondary	24-hour	35 μg/m^3	98th percentile, averaged over 3 years
Particulate Matter (PM_{10})	Primary and Secondary	24-hour	150 μg/m^3	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO_2)	Primary	1-hour^e	75 ppb (4)	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3-hour	0.5 ppm	Not to be exceeded more than once per year

Notes: Table from https://www.epa.gov/criteria-air-pollutants/naaqs-table (accessed January 16, 2019).
1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 μg/m3 as a calendar quarter average) also remain in effect.
2) The level of the annual NO2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O3 standards additionally remain in effect in some areas. Revocation of the previous (2008) O3 standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.
(4) The previous SO2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2)any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO2 standards or is not meeting the requirements of a SIP call under the previous SO2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.
Units of measure: ppm = parts per million; ppb = parts per billion; μg/m^3 = micrograms per cubic meter.

The CAA establishes levels and timetables for each region to achieve attainment of the NAAQS. Areas that do not meet the NAAQS are designated by EPA as nonattainment areas. Each State must prepare a State Implementation Plan (SIP), which documents how it 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.

Section 176(c) of the CAA (42 U.S.C. 7506) 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 23 U.S.C. or the Federal Transit Act. FMCSA actions are not funded by 23 U.S.C. or the Federal Transit Act.

The General Conformity Rule establishes emissions thresholds, or *de minimis* levels, for evaluating the conformity of a Federal agency action. If net emissions are less than thresholds defined by the General Conformity Rule, the action is presumed to conform, and no further conformity evaluation is required. However, should emissions exceed any of these thresholds in a nonattainment or maintenance area, 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 in 40 CFR 93.152 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]." The General Conformity Rule defines emissions as "direct" or "indirect." 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 the HOS rulemaking, no emissions occur at the same time and place as the Federal action; thus, the Final Action has no direct emissions.

The definition of "indirect emissions" contains four criteria, all of which must be met. Under 40 CFR 93.152 of the EPA General Conformity Rule, "indirect emissions" are 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 continuous 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. No General Conformity Analysis is thereby required for the Final Action.

FMCSA believes any changes in emissions that could result from implementation of this rule would not meet the definition of an indirect impact. For instance, though changes in the rule would allow drivers and motor carriers flexibility to take breaks, and use exceptions outlined in Table 2 above, these changes would not, in and of themselves, result in emissions releases. In addition, based on the RIA completed for this rule, it is not reasonably foreseeable that the Final Action would change total CMV VMT, and changes, if any, would be minimal. Furthermore, other potential impacts, such as CMV idling and the associated emissions, if any, would not result in anything beyond *de minimis* emissions.

More specifically, with respect to the potential for impacts to emissions, under the definition of "indirect emissions" all four of the criteria listed above must be met. FMCSA does not believe emissions of criteria pollutants or their precursors that could result from implementation of this rulemaking meet three of these four criteria, namely that: the emissions are reasonably foreseeable, the Agency can practically control the emissions, and that the Agency has continuing program responsibility. First, FMCSA has discussed throughout this EA that increased emissions, if any, are not reasonably foreseeable.[6] Regarding the second and third criteria, which are related, FMCSA's authority limits its ability to require drivers to choose specific behaviors such as alternatives to idling. If FMCSA had authority to control CMV emissions, the Agency could propose a prohibition on idling or require drivers to choose an alternative such as use of electrified truck stops and auxiliary power units, both of which could reduce idling emissions that may result from the Final Action. Because FMCSA lacks this jurisdiction and has no program responsibility over emissions, the Final Action would not meet the definition of indirect emissions under the second and third criteria, and consequently is exempt from the CAA General Conformity Rule.
Therefore, given that this rulemaking does not result in either direct or indirect emissions, it is exempt from the General Conformity rule, and a general conformity determination is not required. Nonetheless, FMCSA is evaluating air emissions for the purposes of comparing impacts under NEPA.

Air Toxics

Motor vehicle emissions contribute to ambient levels of air toxics known or suspected to be human or animal carcinogens or which have otherwise noncancer health effects. The EPA conducts yearly National Air Toxics Assessments (NATA) that estimate potential health risks from breathing 180 air toxics—including exposure to diesel particulate matter (DPM). The 2018 NATA—with data from calendar year 2014—shows an overall decline in air toxics nationally though elevated levels are evident in certain areas.[7]

[6] See infra sections 3.1, 3.3, 3.4.
[7] *See* 2018 NATA at: https://www.epa.gov/national-air-toxics-assessment (accessed December 17, 2018).

EPA points to motor vehicles as significant contributors of air pollutants including benzene, formaldehyde, 1,3-butadiene, acetaldehyde, and diesel particulate matter and diesel exhaust organic gases.[8] EPA lists a total of 21 compounds emitted from motor vehicles known or suspected to cause cancer or other serious health effects. This list includes volatile organic compounds (VOCs) and metals, as well as diesel particulate matter and diesel exhaust organic gases (collectively DPM + DEOG).

The term polycyclic organic matter (POM) defines a broad class of compounds that includes the polycyclic aromatic hydrocarbon compounds (PAHs). POM compounds are formed primarily from combustion and are present in the atmosphere in particulate form from various sources including vehicle exhaust. Cancer is the major concern from exposure to POM. The EPA has classified seven PAHs (benzo[a]pyrene, benz[a]anthracene, chrysene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenz[a,h]anthracene, and indeno[1,2,3- cd]pyrene) as Group B2, probable human carcinogens.

The EPA does not analyze POM, including naphthalene, separately, but it can occur as a component of DPM and is addressed under DPM below.

- *Acetaldehyde* is classified in the EPA's Integrated Risk Information System (IRIS) database[9] as a probable human carcinogen, based on nasal tumors in rats, and is considered toxic by the inhalation, oral, and intravenous routes (based on definitive animal studies; human studies are lacking). Acetaldehyde is a byproduct of incomplete fuel combustion but is produced from many other sources (including wood stoves). Acetaldehyde is also formed through a secondary process when other mobile source pollutants undergo chemical reactions in the atmosphere. The primary effects of exposure to acetaldehyde vapors include eye, skin, and respiratory-tract irritation.
- *Acrolein* is a highly flammable liquid mainly used as a chemical intermediate for the manufacture of plastics or colloidal forms of metals. It is also an abundant by-product of biodiesel production.[10] It is extremely acrid and irritating to humans when inhaled, with acute exposure resulting in upper respiratory-tract irritation, mucus hypersecretion, and congestion. The EPA IRIS database states that acrolein cannot be conclusively listed as a human carcinogenic due to the lack of studies available.[11]
- *Benzene*: Benzene, also known as benzol, is widely used as an industrial solvent and component of gasoline. Inhalation is the major route of exposure to benzene.[12] The EPA IRIS database lists benzene as a known human carcinogen (causing leukemia) by all

[8] https://www.federalregister.gov/documents/2001/03/29/01-37/control-of-emissions-of-hazardous-air-pollutants-from-mobile-sources (accessed December 17, 2018).
[9] IRIS https://www.epa.gov/iris (accessed December 17, 2018).
[10] https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=NRMRL&dirEntryId=238706 (accessed December 17, 2018).
[11] *See* https://www.epa.gov/sites/production/files/2013-09/documents/cancer_guidelines_final_3-25-05.pdf (accessed January 22, 2019).
[12] https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/0276tr.pdf (accessed December 17, 2018).

routes of exposure and concludes that exposure is associated with additional health effects, including genetic changes in both humans and animals and increased proliferation of bone marrow cells in mice.[13] However, at present, the true cancer risk from benzene is not entirely clear.[14]

- EPA characterizes *1,3-butadiene* as a gas used in the commercial production of styrene-butadiene rubber, plastics, and thermoplastic resins. The primary source of 1,3-butadiene is automobile exhaust.[15] Animal studies confirm 1,3-butadiene as a carcinogen; in humans the mode of transmission is through inhalation.
- *DPM*, along with diesel exhaust organic gases, is a component of diesel exhaust. DPM particles are very fine, with most smaller than 1 micrometer in diameter; their small size enables inhaled DPM to reach the lungs. Particles typically have a carbon core coated by condensed organic compounds such as POM, which include mutagens and carcinogens. DPM also includes elemental black carbon particles emitted from diesel engines. The EPA explains how both acute and chronic health effects can result from exposure to DPM.[16] Exposure to such particles can affect both the lungs and heart. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including: 1) premature death in people with heart or lung disease; 2) nonfatal heart attacks; 3) irregular heartbeat; 4) aggravated asthma; 5) decreased lung function; and 6) increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing. Particles from DPM can be carried over long distances by wind and then settle on ground or water making lakes and streams acidic and contributing to acid rain. DPM containing POM is a probable human carcinogen based on animal data. Polycyclic aromatic hydrocarbons (PAHs) are a subset of POM containing only hydrogen and carbon atoms. Several PAHs are known or suspected carcinogens.[17]
- *Formaldehyde* is a clear colorless gas and a byproduct of fuel combustion.[18] Since 1987, EPA has classified formaldehyde as a probable human carcinogen based on evidence in humans and in rats, mice, hamsters, and monkeys.[19] Formaldehyde exposure also causes a range of non-cancer health effects, including irritation of the eyes (burning and watering), nose, and throat. Effects in humans from repeated exposure include respiratory-tract irritation, chronic bronchitis, and nasal epithelial lesions. Animal studies suggest that formaldehyde might also cause airway inflammation. Several studies suggest that formaldehyde might increase the risk of asthma, particularly in the young.[20]

The EPA has not established NAAQS for air toxics and no regulatory thresholds apply to the total emissions of air toxics associated with the Final Action and its alternatives.

[13] https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0276_summary.pdf (accessed January 22, 2019).
[14] Ibid.
[15] https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=54499 (accessed December 28, 2018).
[16] https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm (accessed December 20, 2018).
[17] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1001EX6.txt (accessed December 20, 2018).
[18] https://www.epa.gov/formaldehyde/facts-about-formaldehyde (accessed December 28, 2018).
[19] Ibid.
[20] Ibid.

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 greenhouse gases (GHGs) affect Earth's surface temperature by absorbing solar radiation that would otherwise be reflected back into space. The impact of GHGs 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).

According to the EPA web page, *Climate Change Indicators: Greenhouse Gases:* "concentrations of carbon dioxide and other greenhouse gases in the atmosphere have increased since the beginning of the industrial era. Almost all this increase is attributable to human activities.[21] Historical measurements show that the current global atmospheric concentrations of carbon dioxide are unprecedented compared with the past 800,000 years, even after accounting for natural fluctuations."[22] Most man-made GHG come from CO_2, which accounts for 65% of GHGs overall.[23] Between 1990 and 2016, GHG emissions from transportation sources increased more than any other sector.[24] In terms of vehicle types, light-duty vehicles (including passenger cars and light-duty trucks) accounted for 60 percent of these GHG emissions. Medium- and heavy-duty trucks made up 23 percent of emissions.[25] While most of the GHG emissions increases were from light-duty vehicles, emissions from medium and heavy-duty trucks nearly doubled between 1990 and 2016.

In 2016, the transportation sector accounted for 28.5 percent of GHG emissions overall (the other sources of GHGs are attributable to industry (22.0 percent), electricity production (28.4 percent), commercial and residential uses (11.0 percent), and agriculture (9.0 percent)).[26] There has been dramatic improvement in the reduction of air pollutant emissions from mobile emissions source toxics[27] and air pollutant emissions continue to decline from 1990 levels. Therefore, under both alternatives, CMV drivers could be exposed to lower DPM and PM concentrations than they were in the early 1990s and any health risk associated with DPM would continue to diminish with the most recent changes in emission standards for diesel fuel and engines. Overall, the number of unhealthy air quality days have diminished. Between 2000 and 2017, the number of unhealthy air quality days dropped by over 30 percent.[28]

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[21] IPCC (Intergovernmental Panel on Climate Change). 2013. Climate change 2013: The physical science basis. Working Group I contribution to the IPCC Fifth Assessment Report. Cambridge, United Kingdom: Cambridge University Press. Available at https://www.ipcc.ch/report/ar5/wg1/ (accessed January 19, 2019).
[22] https://www.epa.gov/climate-indicators/greenhouse-gases (accessed January 11, 2019).
[23] *See* Global Greenhouse Gases Emissions by Gas at https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data (accessed January 11, 2019).
[24] https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions (accessed January 14, 2019).
[25] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100USI5.pdf, page 2 (accessed January 11, 2019).
[26] https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions - note EPA GHG emission numbers do not total 100% (accessed January 30, 2019).
[27] https://www.epa.gov/sites/production/files/2015-09/documents/mcdonald_pres.pdf (accessed January 22, 2019).
[28] https://gispub.epa.gov/air/trendsreport/2018/documentation/AirTrends_Flyer.pdf (accessed January 22, 2019).

Heavy Duty Diesel Vehicle (HDDV) Activity Levels and Contribution to Emissions

The Heavy-Duty Diesel Vehicle (HDDV) portion of CMVs is a major source of NO_x emissions nationally and contributes substantially to total national mobile source particulate matter emissions of PM_{10} and SO_2. EPA announced in November 2018 its intention to update its current NO_x emissions standards established in 2001. Dubbed, "The Cleaner Truck Initiative," the Agency believes it must do more to address NO_x emissions.[29] Though NO_x emissions have declined over 40%, EPA believes new standards are needed as heavy-duty trucks are anticipated to account for one third of NO_x emissions by 2024.

HDDVs are responsible for more than 17 percent of all U.S. NO_x emissions and more than 31 percent of NO_x emissions from mobile sources. HDDVs also contribute greater than 23 percent of mobile source PM_{10} emissions and more than 10 percent of mobile source SO_2 emissions.

There has been steady improvement in air pollutant emissions from mobile emissions source toxics[30] and air pollutant emissions continue to decline. Between 1970 and 2017, the combined emissions of six common pollutants ($PM_{2.5}$ and PM_{10}, SO_2, NO_x, VOCs, CO and Pb) dropped by 73 percent. As of 2018, SO_2 emissions had declined by 88% since 1990; PM_{10} emissions have been reduced by 25%; NO_x emissions are lower by 58% and CO_2 emissions are 65% lower.[31] These reductions are largely driven by federal and state implementation of stationary and mobile source regulations and because many drivers are choosing to drive cars with better fuel economy.[32]

The Air Quality Index (AQI) is a color-coded index the EPA uses to compute daily air pollution for ozone, particle pollution, NO_2, CO, and SO_2. According to the EPA, the average number of unhealthy air quality days has dropped from 2,076 unhealthy days in 2010 to 729 in 2017 (from 35 Major U.S. Cities for Ozone and $PM_{2.5}$ combined).[33]

Environmental Consequences

ALTERNATIVE 1: No Action Alternative

Under the No Action Alternative, FMCSA would not implement changes to the HOS regulations. Because this is the baseline to which the action alternative is compared, there would be no impacts to overall air quality.

ALTERNATIVE 2: Final Action

Emissions

[29] https://www.epa.gov/regulations-emissions-vehicles-and-engines/cleaner-truck-initiative (accessed January 14, 2019).
[30] https://www.epa.gov/sites/production/files/2015-09/documents/mcdonald_pres.pdf (accessed January 22, 2019).
[31] Ibid.
[32] https://gispub.epa.gov/air/trendsreport/2018/documentation/AirTrends_Flyer.pdf (accessed January 22, 2019).
[33] Ibid.

FMCSA cannot definitively predict any changes in emissions in locations where modifications to CMV operations may occur as a result of the Final Action. Consequently, FMCSA is unable to firmly establish emissions impacts resulting from implementation of the rule.[34] Regional air quality effects from air pollutant emissions depend on local conditions which can differ on a daily or even hourly basis. Without knowing the location, topography, time of day, ambient pollutant concentrations, and meteorological conditions (e.g., temperature, sunlight, wind conditions) under which any CMV emissions might occur, their effects on air quality are unknowable at this time. Any such impacts are not reasonably foreseeable and the means to obtain such data are unknown.[35]

Some possible (though uncertain) results from implementation of the rule are discussed below. Certain driving behaviors could lead to either increases or decreases in emissions. However, FMCSA believes any increases or decreases in driving distances would not result in significant variances from those under the existing rule. Moreover, market analysis conducted as part of the RIA completed for this rulemaking suggests drivers eligible to increase driving distances under the short-haul driving exception are unlikely to do so as no new markets (beyond existing) for drivers are anticipated from this rule change. Nevertheless, some possible differing scenarios are discussed below.

Implementation of the final rule could lead to more efficient driving resulting in a reduction in fuel consumption and reduced air emissions. Specifically, drivers would have additional flexibility to wait out periods of adverse driving conditions rather than continuing to drive to stay within the current 14-hour driving window. The reduced time-in-truck requirement (one hour less) under the sleeper-berth provision could also reduce emissions from idling.[36]

However, the Final Action could also lead to more idling and additional emissions in the event that drivers increase their work time by 30 minutes while taking the 30-minute break while on-duty, drive longer distances under the short-haul exception, or wait out adverse weather/conditions while idling. If an increase in engine idling were to occur as a result of implementation of the rule, there would consequently be an increase in drivers' exposure to DPM, HDDV, and potential negative impacts to drivers' health.[37] However, as previously noted, it is uncertain whether there would be *any* increase in idling or overall VMT as a result of the rule change.

Uncertainty regarding the degree to which drivers' behavior would change in response to the Final Rule prevents the Agency from quantifying these potential impacts. The Agency believes that any positive or negative effects that could result from the Final Action would be *de minimis* and would effectively negate each other. No significant impacts are anticipated. Consequently, FMCSA finds that drivers are not expected to suffer "deleterious" impacts to their "physical condition" from this rulemaking (49 U.S.C. 31136(a)(4)).

[34] 40 CFR 1502.22.
[35] Ibid.
[36] CMV drivers may sleep with engines running to provide heat and/or cooling in the sleeper berth.
[37] Emissions from HDDV cannot be quantified as the Agency does not have data on changes to emissions that may result from the revised rule.

Climate Change and Greenhouse Gas Emissions

According to the EPA, increased GHG emissions impact the human and natural environment in a myriad of ways. A warmer climate can lead to increased incidences of heat-related illnesses and deaths and contribute to air pollution. More severe weather events, attributable to GHGs, may reduce crop yields. Rising sea levels and related storm surge are inundating coastal ecosystems and wetlands and transforming existing ecosystems.[38] Such flooding impacts and extreme weather can also impact transportation infrastructure, such as roads and bridges, as well as emergency response capabilities, and cause disruptions to CMV and intermodal supply chains.[39]

Under the final HOS rule, drivers could take their required 30-minute break while on-duty; drive within a wider air-mile radius under the short-haul exception; or extend their driving window under the adverse weather conditions provision. Under the Final Action, drivers using the sleeper-berth exception might also be more likely to wait out traffic congestion, storms, and other traffic impediments due to the increased flexibility afforded by the final rule, resulting in fewer GHG emissions. However, if drivers idle their engines during their rest periods or drive further under the short-haul exception, the opposite would be true and increases in fuel consumption could lead to additional GHG emissions. The Agency believes, however, that any of the scenarios discussed above would not result in significant impacts.

3.3 SOCIOECONOMICS

3.3.1 Affected Environment

Entities that would incur costs or benefits from compliance and implementation of the revised HOS rule include CMV drivers, motor carriers and Federal and State governments.

3.3.2 Environmental Consequences

The RIA prepared for the Final Action provides an assessment of the costs, benefits, and health and safety impacts that would result from implementation of the revised rule. FMCSA anticipates that the Final Action will result in negative costs, or cost savings, for motor carriers and drivers, and quantifies the motor carrier cost savings that would result. FMCSA also anticipates that the Final Action will result in training and IT costs for Federal and State governments. As discussed in the RIA, FMCSA also anticipates that the final rule would be safety-neutral and result in no significant health impacts. Any potential positive or negative impacts are examined below. Additional economic analysis can be found in the RIA.

No Action Alternative

Under the No Action Alternative there would be no change to costs or benefits associated with implementing the final rule and no change from the baseline conditions.

[38] https://www.epa.gov/report-environment/greenhouse-gases (accessed January 22, 2019).
[39] Federal Highway Administration, Hydraulic Engineering Circular No. 25 – Volume 2, Publication No. FHWA-NHI-14-006, October 2014. Available at: https://www.fhwa.dot.gov/engineering/hydraulics/pubs/nhi14006/nhi14006.pdf (accessed January 24, 2019).

Final Action

30-MINUTE BREAK

Overview

Currently, CMV truck drivers, except those operating under the short-haul exception or in Alaska, are subject to the 30-minute break requirement pursuant to 49 CFR 395.3(a)(3)(ii). Under this requirement, driving is not permitted if more than 8 hours have passed since the end of the driver's last off-duty or sleeper-berth period of at least 30 minutes. This requirement results in drivers being required to take 30 minutes of off-duty time following 8 hours on-duty, regardless of the number of hours driven.

In its final rule, FMCSA ties the requirement for a break to the number of driving hours rather than hours on-duty. The final rule prohibits driving for more than 8 hours without a 30-minute change in duty status. This would allow drivers to take a 30-minute pause from driving (whether on-duty or off-duty) to count as a break. This change will increase flexibility by reducing the number of drivers affected by the break requirement (i.e., those drivers who work for 8 hours but do not drive for 8 consecutive hours would not be required to take a break), and reducing the impact on those still required to take a break (i.e., allowing on-duty/non-driving time to satisfy the break requirement). The final rule does not change available driving time and maintains the requirement to take a break from driving.

In its RIA for the final rule, and as provided below, FMCSA completes a qualitative assessment of potential cost savings to drivers and estimates the cost savings to motor carriers associated with allowing the 30-minute break to be completed off-duty versus on-duty.

Cost Impacts

Opportunity Cost of the 30-Minute Break to Motor Carriers

Broadly speaking, the opportunity cost to a motor carrier (firm) of a given regulatory action is the value of the best alternative that the firm had to forgo in order to comply with such action. The final rule will allow an input of production (driver labor) previously unavailable to a carrier to be put to economically productive use for a time equivalent to the time currently required to be spent in an off-duty status. Because more driver labor hours can be used productively, this could be reflected as some increment of profit. This increment of value accrues to the regulated entity and is considered to affect negative costs resulting in cost savings.

The current HOS regulations require a driver to take a 30-minute off-duty break after 8 hours on-duty if he/she wishes to continue driving. In the final rule, a 30-minute break would only be required following 8 consecutive hours of driving. Therefore, those drivers who work more than 8 hours, but who drive less than 8 consecutive hours would receive regulatory relief from the revised rule. Additionally, those who drive more than 8 consecutive hours would receive regulatory relief by the allowance of on-duty, non-driving time to meet the 30-minute break requirement.

In its analysis completed in the RIA, FMCSA follows the methodology used in the Entry-Level Driver Training (ELDT) rulemakings published in 2016 and 2018. This analysis values the reduction in driver time spent in nonproductive activity as the opportunity cost to the firm, represented by the now attainable profit, using three variables: 1) the hours that would now be available for labor (i.e., those hours that are currently required to be off-duty, but in the final rule could be on-duty/not driving); 2) an estimate of a typical average motor carrier profit margin; and 3) the marginal cost of operating a CMV.

In its RIA for the final rule, the Agency stratifies the population into three driver groups (Groups 1-3) based on driving and work time. Group 1 drivers drive more than 8 hours in an average shift; Group 2 drivers work more than 8 hours in an average shift but do not drive more than 8 hours; and, Group 3 drivers work fewer than 8 hours in an average shift. To define driver groups by the intensity of their schedules, the Agency used ELD-captured shift data from Virginia Tech Transportation Institute (VTTI) provided by 10 carriers between 2013 and 2016.[40]

The 2011 HOS requirements, including the 30-minute break, went into effect on July 1, 2013. As such, the time span over which the data was collected allowed the Agency to isolate the impact of the 2011 requirements by segmenting the data into distinct time periods before and after the 30-minute break provision went into effect. Approximately 13% of drivers provided information before July 1, 2013. Eight of the carriers are for-hire businesses, and two private carriers. The research team targeted carriers with more than 1,000 power units. Table 4 shows the percent of the workforce within each driver group, as captured in the VTTI dataset.

Table 4. Driver Groups by Intensity of Schedule

Driver Group	Percent of Workforce
Group 1 - Drivers who drive more than 8 hours in an average shift	17.3%
Group 2 - Drivers who work more than 8 hours in an average shift but do not drive more than 8 hours	56.1%
Group 3 - Drivers who work less than 8 hours in an average shift (unaffected)	26.6%

Source: VTTI data.

The Agency applied the driver group percentages to the estimated population of drivers in 2020 as well as the projected population of drivers for each year of the 10-year analysis period.[41] The total population for each year of the analysis period as well as the estimated number of drivers in each driver group is shown in Table 5.

Table 5. Estimated Driver Population by Driver Group

[40] The ELD and crash datasets were merged by linking the driver identification number. Not all crashes were linked to an associated driver in the ELD dataset (meaning the duty status information for that driver was not present, or the original identifying information for the driver was incorrectly input into the dataset by the carrier). For all but one of the carriers, the match rate between the crash and ELD datasets was between 58 and 100 percent. One of the carrier's match rate was 38 percent. This carrier was excluded from the analyses given the poor matching percentage.

[41] USDOT FMCSA MCMIS, snapshot.

Year	CMV Drivers Currently Subject to the 30 Minute Break Requirement (A)	Group 1 (B = A × 17.3%)	Group 2 (C = A × 56.1%)	Group 3 (D = A × 26.6%)
2020	2,972,715	514,220	1,667,158	791,337
2021	2,986,820	516,660	1,675,068	795,091
2022	3,000,991	519,111	1,683,016	798,864
2023	3,015,230	521,574	1,691,001	802,654
2024	3,029,536	524,049	1,699,025	806,463
2025	3,043,911	526,536	1,707,086	810,289
2026	3,058,353	529,034	1,715,186	814,134
2027	3,072,864	531,544	1,723,324	817,996
2028	3,087,444	534,066	1,731,500	821,878
2029	3,102,093	536,600	1,739,716	825,777

Next, the Agency determined how drivers in each group would be affected by the change in the 30-minute break provision. The Agency assumed drivers who drive more than 8 hours in an average shift (Group 1) would regain half of the 30 minutes (15 minutes or 0.25 hours). In addition, drivers in this category would likely take a break later in their workday when tying the break requirement to driving time rather than on-duty time. If so, this would result in a shift in the timing of the break and provide increased flexibility for drivers to take a break when needed.

The Agency assumed that drivers who work more than 8 hours in an average shift but do not drive more than 8 hours (Group 2) would regain the full 30 minutes (0.5 hours) since their driving time would not trigger the break requirement. However, there is uncertainty in the number of drivers who would voluntarily elect to take a break if not required to do so. Therefore, the Group 2 estimate is the maximum estimated time saved. Additionally, FMCSA assumes that the work schedule for this driver group is more flexible and would likely necessitate multiple on-duty, non-driving breaks throughout the day. Drivers who work fewer than 8 hours in an average shift (Group 3) are not impacted by the current regulation nor affected by the change in the break provision.

Using the assumptions on the time saved for each group of drivers due to the changes to the break provision in the final rule, the Agency multiplied the estimated number of drivers in each group by the time savings per driver to obtain an estimate of the total hours saved per shift for each driver group.

As shown in Table 6, the Agency estimates that changes to the 30-minute break provision would result in 996,699 hours saved per affected shifts across all driver groups.

Table 6. Potential Total Hours Saved per Shift by Driver Group

Driver Group	Total Drivers per Driver Group (A)	Hours Saved per Affected Shift (B)	Total Hours Saved Affected Shift (C = A × B)
Group 1	516,660	0.25	129,165
Group 2	1,675,068	0.5	837,534
Group 3	795,091	0	0
Total			**996,699**

Note: Totals may not add up precisely due to rounding.

After estimating the hours saved for the affected shifts, the Agency then determined the number of shifts that would be affected by the provision change for each driver group. For this calculation, the Agency again used VTTI data to estimate the change in the number of 30-minute breaks that occurred as a result of the 2011 HOS regulation by subtracting the average number of 30-minute off-duty breaks taken by drivers for the period before the 2011 HOS regulation went into effect from the average number of 30-minute off-duty breaks taken after the effective date of the 2011 HOS regulation, by driver group. [42] This average increase in the number of breaks per week, per driver, is shown in Column (A) in Table 7 below. The Agency then multiplied this change in the number of 30 minute off-duty breaks per week per group by an assumed 50 weeks worked per year. The Agency estimated an average of 50 weeks per year based on the idea that most employees in the United States would take at least two weeks off for vacation or due to illness in a given year. Table 7 shows the results of this calculation and the number of affected shifts per year, per driver, for each driver group.

Table 7. Annual Number of Affected Shifts per Driver, by Driver Group in 2021

Driver Group	Average Increase in Breaks per Week (A)	Work Weeks per Year (B)	Number of Affected Shifts per Year, per Driver (C = A × B)
Group 1	2.4	50	120
Group 2	1.6	50	80
Group 3	1.2	50	60

The Agency then used information on the total hours saved per affected shift and the number of affected shifts per year, per driver, for each driver group from Table 7 to obtain the total number of hours saved for each driver group. As shown in Table 8, these calculations resulted in a total number of hours saved per year due to the changes in the break provision of 82,502,528 starting in 2021 once the rule is in effect for a full year.

It should be noted that, although the VTTI data show an increase in the average number of breaks taken per week by drivers in Group 3 (drivers who work less than 8-hour shifts on average), there are no hours saved for these shifts in the calculations shown in Table 8. Because these drivers work (and thus drive) fewer than 8 hours on average, they would not be required by the 2011 HOS regulation to take a 30-minute break, and thus any change in how this group uses their break time is not attributable to the rule.

[42] The VTTI data isolated off-duty breaks of 30 to 59 minutes as a proxy for 30-minute breaks because breaks are rarely exactly 30 minutes, and those taken to meet the requirement may be longer in duration. Thus, all breaks in this section could be between 30 and 59 minutes in length.

Table 8. Total Annual Hours Saved by Driver Group in 2021

Driver Group	Total Hours Saved per Affected Shift (A)	Number of Affected Shifts per Year (B)	Total Hours Saved per Year (C = A × B)
Group 1	129,165	120	15,499,802
Group 2	837,534	80	67,002,726
Group 3	0	60	0
Total			82,502,528

Note: Totals may not add up precisely due to rounding.

After determining the number of hours saved due to the changes in the break provision, the next step is to estimate the marginal cost of operating a CMV. The ATA report, *An Analysis of the Operational Costs of Trucking: 2019 Update,* found that marginal operating costs were $71.78 per hour in 2018.[43] These marginal costs include vehicle-based costs (e.g., fuel costs, insurance premiums, etc.), and driver-based costs (i.e., wages and benefits).

Next, the Agency estimated the profit margin for motor carriers. Profit is a function of revenue and operating expenses, and ATA defines the operating ratio of a motor carrier as a measure of profitability based on operating expenses as a percentage of gross revenues.[44] Armstrong & Associates, Inc. (2009) state that trucking companies that cannot maintain a minimum operating ratio of 95% (calculated as Operating Costs ÷ Net Revenue) will not have sufficient profitability to continue operations.[45] They explain that trucking companies need a minimum profit margin of 5% of revenue to continue future operations. Transport Topics publishes data on the "Top 100" for-hire carriers, ranked by revenue.[46] In 2014, thirty-nine of the Top 100 carriers also provided net income information to Transport Topics. FMCSA estimates that these 39 carriers had an average profit margin of approximately 4.3% for 2014.

In 2018, thirty-three of the Top 100 carriers that provided net income information reported by Transport Topics, had an average profit margin of approximately 6%.[47] The higher profit margin experienced in 2018 is confirmed in a Forbes article that found net profit margin for freight trucking companies "expanded to 6% in 2018, compared with an annual average of between 2.5 and 4% each year since 2012."[48] Due to the differing profits gained, FMCSA assumed the lower profit margin of 5% for motor carriers for purposes of its RIA analysis.

[43] American Transportation Research Institute (ATRI). An Analysis of the Operational Costs of Trucking: 2019 Update. October 2019. Table 10, pg. 19. Available at: https://truckingresearch.org/wp-content/uploads/2019/11/ATRI-Operational-Costs-of-Trucking-2019-1.pdf (accessed December, 11, 2019). Source data are assumed to be presented in 2018 dollar terms.
[44] ATA. *American Trucking Trends 2015, pg*. 79.
[45] Armstrong & Associates, Inc. *Carrier Procurement Insights*. 2009. Pages 4-5. Available at: https://www.3plogistics.com/product/carrier-procurement-insights-trucking-company-volume-cost-and-pricing-tradeoffs-2009/ (accessed January 5, 2016).
[46] Transport Topics. 2014. *Top 100 For-Hire Carriers*. Available at: http://ttnews.com/top100/for-hire/2014 (accessed November 19, 2018).
[47] Transport Topics. 2018. *Top 100 For-Hire Carriers.* Available at: https://www.ttnews.com/top100/for-hire/2018 (accessed November 19, 2018).
[48] Forbes. *Trucking Companies Hauling in Higher Sales.* Available at: https://www.forbes.com/sites/sageworks/2018/03/04/trucking-companies-hauling-in-higher-sales (accessed November 19, 2018).

Using the assumed profit margin of 5% for motor carriers, FMCSA estimated the revenue gained per hour for motor carriers by multiplying the marginal cost per hour by the profit margin. This calculation resulted in an estimated revenue per hour of $75.37 ($71.78 × (1 + 5%)). The Agency subtracted the per hour marginal cost from the per hour revenue to obtain an estimated profit per hour of $3.59 ($75.37 – $71.78).

Lastly, the Agency multiplied the total annual number of hours that would be saved by the break provision by the estimated profit per hour to estimate the total annual cost savings to carriers. For 2020, FMCSA estimates that motor carriers will reap cost savings in the last 12 weeks (or 24%) of the 50-hour work week year. Thus, as shown in Table 9, fewer total hours are saved in 2020 than in other years (thus resulting in fewer overall savings). This calculation resulted in total cost savings in 2021 of $296.1 million (82,502,528 hours × $3.59). FMCSA then repeated this calculation for each year of the analysis period using the estimated number of drivers in each year. As shown in Table 9, these calculations resulted in a total cost savings of $274.1 million on an annualized basis at a 7% discount rate.

Table 9. Total and Annualized Motor Carrier Cost Savings due to Changes in Break Provision

Year	CMV Drivers Currently Subject to the 30 Minute Break Requirement	Total Hours Saved (A)	Profit per Hour (B)	Total Cost Savings – Undiscounted (Millions of 2017$) (C = A × B)	Total Cost Savings - 3% Discount Rate (Millions of 2017$)	Total Cost Savings - 7% Discount Rate (Millions of 2017$)
2020	2,972,715	27,376,449	$3.59	**($98.3)**	**($95.4)**	**($91.8)**
2021	2,986,820	82,502,528	$3.59	**($296.1)**	**($279.1)**	**($258.6)**
2022	3,000,991	82,893,979	$3.59	**($297.5)**	**($272.3)**	**($242.9)**
2023	3,015,230	83,287,288	$3.59	**($298.9)**	**($265.6)**	**($228.0)**
2024	3,029,536	83,682,462	$3.59	**($300.3)**	**($259.1)**	**($214.1)**
2025	3,043,911	84,079,512	$3.59	**($301.8)**	**($252.7)**	**($201.1)**
2026	3,058,353	84,478,446	$3.59	**($303.2)**	**($246.5)**	**($188.8)**
2027	3,072,864	84,879,272	$3.59	**($304.6)**	**($240.5)**	**($177.3)**
2028	3,087,444	85,282,000	$3.59	**($306.1)**	**($234.6)**	**($166.5)**
2029	3,102,093	85,686,640	$3.59	**($307.5)**	**($228.8)**	**($156.3)**
Total 10-Year Cost Savings					**($2,375)**	**($1,925)**
Total Annualized Cost Savings					**($278.4)**	**($274.1)**

Notes:
(a) Total cost values may not equal the sum of the components due to rounding. (The totals shown in this column are the rounded sum of unrounded components.)
(b) Values shown in parentheses are negative values (i.e., less than zero) and represent a decrease in cost or a cost savings.

Opportunity Cost Savings of the 30-Minute Break to Drivers

FMCSA recognizes that mandatory off-duty time is not always in the best interest of drivers. Some commenters stated that the existing break requirement forces drivers to rest when they are not tired and penalizes them for resting when they are. Thus, it is reasonable to assume that the

current HOS regulations are imposing an opportunity cost on some drivers that could be alleviated by providing them with greater flexibility when taking rest breaks.

In past RIAs for non-HOS regulations, FMCSA has calculated the opportunity cost of drivers' time using their wage rates. For the final HOS rule, increased flexibility provided by the rule change could result in a reduction in costs, or a cost savings to drivers calculated as the number of hours saved multiplied by the driver wage rate. However, because FMCSA did not calculate the opportunity cost of the driver's time in its 2011 HOS RIA, to be consistent, it has not done so here.

Health and Safety Impacts

The changes to the 30-minute break provision in the final rule do not involve an increase in available driving time. Therefore, FMCSA believes that these changes should not have an impact on the safety benefits of the HOS rule. As discussed below, the Agency is reevaluating the benefit of off-duty breaks relative to on-duty breaks for multiple reasons.

The agency has carefully considered the view of numerous commenters requesting exemptions from or removal of the 30-minute break requirement. As a result of this feedback, and after reviewing the available research, FMCSA reasons that an on-duty break would not adversely affect safety beyond any impacts from the current HOS rule. Based on comments received on the ANPRM and the NPRM, the Agency has taken another look at the Blanco, et al. (2011), study to determine the applicability of the study findings to the 30-minute break requirement.[49]

While Blanco found that off-duty breaks resulted in a comparative decrease in subsequent safety critical events (SCE) than on-duty breaks, many of the breaks analyzed in the study classified as "30-minute breaks" were actually 30 to 59 minutes long.[50] The Blanco study breaks were also voluntary and many taken in the sleeper-berth. This differs from the current rule where the 30-minute rest break must be taken even when drivers are not fatigued or a parking space is unavailable. Due to these differences, the Blanco study participants could have experienced more restorative off-duty breaks than the off-duty breaks examined in the 2011 final rule.

Blanco also categorized breaks from driving into four groups: Rest During Duty Period (Type 1), Work During Duty Period (Type 2), Rest During Duty Period/Off Duty (Type 3), and Off-Duty (Type 4). Break Type 1 and Type 4 include resting activities such as eating and sleeping, and break Type 3 is a combination of Type 1 and Type 4 breaks such that it also includes rest activities. The Blanco study collected data from November 2005 to March 2007, when the regulatory guidance required that any time spent in the vehicle cab (except for the sleeper-berth) was considered on-duty time. This would include in-cab activities that after 2011 could be considered off-duty, such as eating or taking naps. As such, while the Blanco study analyzes the

[49] Blanco, M., Hanowski, R., Olson, R., Morgan, J., Soccolich, S., Wu, S.C., & Guo, F. (2011) "The Impact of Driving, Non-Driving Work, and Rest Breaks on Driving Performance in Commercial Motor Vehicle Operations." Available in this rulemaking docket.

[50] In reviewing the Blanco study, it was determined that there were 3,171 breaks of 30 minutes or longer used in the analysis. It should be noted that there were relatively few off-duty breaks – only 211 off-duty breaks, which was less than 6.7 percent of the total number of breaks.

reduction in SCEs for Type 1 and Type 4 breaks separately, under the present regulatory structure they would likely both be considered off-duty breaks and thus would fit into Type 4; Off-Duty Break.

Using the published data in the Blanco study, FMCSA recalculated the magnitude of SCE reduction for an off-duty break using the break frequency published in the Blanco study for break Type 1, Type 3, and Type 4. This calculation resulted in a 33 percent magnitude of SCE reduction, which is lower than the 51 percent for Type 4 breaks alone, and very close to the 30 percent reduction for Break Type 2.[51] FMCSA acknowledges that this result is not precise due to the limitations of the available data. Multiple break types could make up a single break, such that the summation of the break frequency by type can be more than the total number of breaks, and the magnitude of SCE reduction would likely be slightly different than what was calculated above. What is clear, is that, the magnitude in reduction of SCEs that Blanco attributed to off-duty breaks is larger than the reduction in SCEs that would be applicable to the off-duty 30-minute breaks required under the 2011 HOS rule (those that would be made up of Type 1, Type 3, and Type 4 breaks as defined by Blanco). Our recent review of the Blanco study suggests FMCSA placed too great a value on off-duty breaks compared to other break types. What seems to be consistent from the study is that breaks of any type reduce SCEs. Therefore, the Agency is modifying its break provision to allow a driver to take a break while on-duty but not driving, rather than strictly off-duty.

FMCSA developed its existing 30-minute break provision in its 2011 HOS rule based on literature that found a break from driving leads to a reduction in SCEs in the hour after the break. However, many commenters to the ANPRM stated that the current 30-minute break provision is burdensome as it requires drivers to break after eight hours on-duty despite not driving far or not feeling the need to do so. The Agency is now tying its break requirement to eight hours of driving time rather than eight consecutive hours off-duty or following a sleeper-berth period of at least 30 minutes. The changes will: (1) allow a driver to take a break while on-duty, but not driving, rather than requiring the time to be off-duty; and (2) begin the 8-hour period when the CMV operator begins driving. The changes to the 30-minute break provision do not increase the maximum allowable driving time of 11 hours.

FMCSA expects that its rule change will provide an equal level of safety as its existing rule. Our analysis indicates that on-duty and off-duty breaks lead to similar reductions in SCEs thus supporting tying the break requirement to driving rather than on-duty time. While FMCSA continues to believe that a break from driving is important for safety, the Agency acknowledges that its rule change is appropriate and will be less burdensome for carriers and drivers alike. Moreover, as the changes to the 30-minute break provision do not involve an increase in daily driving time, the Agency believes these changes are safety neutral.

[51] It is FMCSA's position that a 3% difference is within the error bounds for determining impact upon crash rates. SCEs are a much more common event than crashes, which results in the likelihood that a 30% reduction and a 33% reduction in SCEs may have the same impact on overall crash rates.

SLEEPER-BERTH

Overview

Drivers qualifying for the HOS sleeper-berth provision at 49 CFR 395.1(g)(1)(i)(A) and (ii)(A) must, before driving, accumulate the equivalent of at least 10 consecutive hours off-duty. The equivalence refers to at least 8 but fewer than 10 consecutive hours in a sleeper-berth, and a separate period of at least 2 hours either in the sleeper-berth or off-duty, or any combination of the two. The Final Action would continue to allow drivers using the sleeper-berth to obtain their required off-duty time by taking fewer hours in the sleeper-berth. However, drivers using this option would be required to obtain one "anchor" period of at least 7 consecutive hours in the sleeper-berth, paired with another period of at least 2 hours, such that 10 hours of off-duty time is achieved.[52] Neither period would count against the 14-hour driving window. As with the current rule, the order of the split-rest period does not matter.

FMCSA does not have definitive data to estimate the population of trucks equipped with sleeper berths, or the number of drivers that use the sleeper-berth provision. The VTTI data indicate that 48.6% of truck drivers in that dataset operate a vehicle with a sleeper berth and could thus potentially take advantage of the sleeper-berth provision.[53] Assuming that the percentage of drivers with a sleeper berth remains constant over time, the number of drivers affected by this change is be expected to increase each year with the increase in the number of CMV drivers.

Cost Impacts

The revised sleeper-berth provision in the final rule allows for additional flexibility in a driver's duty day by: (1) providing for an optional 1-hour reduction in the amount of time that drivers are required to spend in the sleeper-berth, and (2) excluding the shorter rest period when calculating the 14-hour driving window. The changes could result in efficiency gains for drivers as they would be given increased flexibility to make the most individually optimal decisions related to their schedules on a given day. In a technical memorandum, the American Transportation Research Institute (ATRI) focuses on rest periods of three or more hours that would then qualify for a portion of the 10-hour rest requirement and highlights the costs savings and increased flexibility from changes to the sleeper birth provision.[54]

The ATRI analysis modeled two scenarios with a driver traveling across a heavily congested 40-mile urban corridor in Atlanta, GA. In the first scenario, the driver operated under the current HOS requirements and felt the need to continue driving through congestion. In the second scenario, the driver took a 4-hour rest break to avoid congestion and then continued to his/her destination. The second scenario resulted in a reduction in drive time of 45 minutes and required 1 hour and 15 minutes less work time.

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[52] There is no scientific consensus on the definition of anchor sleep. However, for purposes of the rule, "anchor" sleep is generally referred to as a longer period of sleep that is paired with a shorter nap.

[53] VTTI (2018). Phase II: Crash Risk by Driver Schedule. Task 3 Letter Report: Average Duty Status, Duty Period, and Status of the Hours-of-Service (HOS) Rule Change by Driver.

[54] American Transportation Research Institute, Technical Memorandum: Hours-of-Service Flexibility. August 2018. Available at: http://truckingresearch.org/2018/08/28/atri-hours-of-service-flexibility-technical-memo/ (accessed on January 21, 2020).

The decrease in driving and work time occurred because the driver was able to move at a consistent speed without the starting and stopping that occurs in heavy traffic. The technical memorandum demonstrated that avoiding congestion could result in moving freight the same number of miles using fewer work hours. This could reduce fuel and vehicle costs for the motor carriers, improve congestion for the public by removing trucks from the road during peak travel times, and potentially reduce the incidence of crashes. However, FMCSA cannot estimate the magnitude or likelihood of these potential impacts for many reasons. Most notably, they hinge on the availability of CMV parking, which the ATRI technical memorandum assumes is ubiquitous but is in fact not always available. Additionally, not all drivers move through heavily congested areas during peak rush-hour traffic.

The Agency expects that carriers and drivers could realize efficiency gains by the reduction in time required to be in the sleeper-berth and the exclusion of the shorter off-duty period in the calculation of the 14-hour driving window. Under the final rule, drivers will be provided the ability to choose between 2 split-rest options to meet the requirements for an equivalent of 10 consecutive hours off-duty that best fits their situation without reducing their available work time by including the shorter rest period in the calculation of the 14-hour driving window. A driver who uses the sleeper-berth provision today must include the shorter rest period in the calculation of the 14-hour window, resulting in an available 12 hours to complete up to 11 hours of driving. Under the rule drivers would have an additional 2 hours of work time when using the sleeper-berth provision, potentially resulting in increased productivity.

Health and Safety Impacts

This final rule would not increase the available driving time or extend the driving window beyond 14 hours. Additionally, as discussed both in the RIA and in the NPRM, there is an extensive body of research suggesting that split-sleep schedules may improve safety and productivity compared to consolidated daytime sleep. The final rule would ensure that drivers using the sleeper-berth obtain the minimum off-duty time of one “anchor” rest period of a sufficient length to have restorative benefits to fatigue. Changes to the HOS rule also provides drivers with the flexibility to make decisions regarding their rest that best fit their individual needs while continuing to prohibit extended periods of wakefulness and duty hours that could lead to fatigue-related crashes.

FMCSA reviewed the comments received and studies provided and has determined that the rule change would not result in adverse safety outcomes. The available studies on sleeper-berth use highlight that the split sleeper-berth option is a viable and safe alternative to a minimally compliant consolidated break of 10 consecutive hours. The current rulemaking retains a sleeper-berth anchor period of sufficient length for drivers to have the opportunity for rest and when combined with the shorter rest period ensure drivers will continue to have 10 hours of time during each day when they are relieved of all responsibility for performing work. The previous sleeper-berth rule excluded from the 14-hour driving window the required 8-hour period in the berth. The NPRM proposed a similar exclusion not only for the 7-hour period in the berth, but also for the shorter qualifying off-duty period of at least 2 hours. Advocates for Highway and Auto Safety argued that none of the studies cited by the Agency speak to the risks of allowing drivers to operate later into their duty period. It is true that no studies examine the specific parameters of the sleeper-berth rule proposed in the NPRM, but the absence of academic

research exactly on point does not prohibit the Agency from using its own expertise and judgment to promulgate regulations. In this case, FMCSA balanced the industry's desire for added operational flexibility against its overriding responsibility for motor carrier safety, and concluded that the shorter off-duty period (expanded by 50 percent from the previous rule) would afford drivers an opportunity for rest sufficient to counteract any fatigue effects associated with the extended duty day. In fact, we believe that exclusion of the shorter period will promote more effective rest since drivers need no longer worry that the 14-hour clock is ticking away potential revenue miles while they try to rest. And, unlike the "pause" proposed in the NPRM (which the Agency has not adopted), this measure is available only to drivers who use sleeper-berths and are thus experienced in obtaining rest in a variety of places.

The revised sleeper-berth exception would provide drivers greater operational flexibility, while affording the opportunity for the driver to obtain the necessary amount of restorative sleep. As such, the Agency anticipates that the increased flexibility afforded by the final rule will not affect the safety outcomes achieved by the current sleeper-berth provision. Therefore, FMCSA believes that these changes will be safety neutral.

SHORT-HAUL OPERATIONS

Overview

Currently, under 49 CFR 395.1(e)(1), drivers are not required to prepare RODS or use an ELD if they meet certain conditions, including a return to their work reporting location and release from work within 12 consecutive hours. Drivers operating under this provision are permitted a 12-hour workday in which to drive up to 11 hours (for passenger carriers, up to 10 hours) and the motor carrier must maintain time records reflecting certain information. Specifically, the motor carrier that employs the driver and utilizes this exception must maintain and retain for a period of 6 months accurate and true time records showing: the time the driver reports for duty each day; the total number of hours the driver is on-duty each day; the time the driver is released from duty each day; and, for drivers used the first time or intermittently, the total time for the preceding 7 days, pursuant to 49 CFR 395.8(j)(2).

Under 49 CFR 395.3(a)(2) and (3), other property-carrying CMV drivers not utilizing the short-haul exception have a 14-hour driving window in which to drive up to 11 total hours. Under 49 CFR 395.5(a)(1) and (2), CMV drivers operating passenger-carrying CMVs have a 15-hour driving window. However, unless otherwise excepted, these drivers must maintain RODs, generally using an ELD. The drivers qualifying for the 49 CFR 395.1(e)(1) exception currently have the option to use the 14- or 15-hour duty day per §§ 395.3 or 395.5, but may choose not to use the option to avoid keeping RODS.

Additionally, under the existing HOS short-haul exception, drivers must stay within 100 air-miles of their work reporting location. In the Final Action, FMCSA extends the air-mile radius to 150 air-miles.

Cost Impacts

In the ELD rule, FMCSA anticipated that all drivers employed by passenger and private non-passenger (i.e., property) carriers qualifying for the short-haul exception would be able to take advantage of the exception.[55] However, FMCSA received comments on the HOS ANPRM from carriers discussing their actual business practices. On many shifts, drivers return to their work reporting location within 12 hours; but on some occasions, drivers require an additional 2 hours in their workday. Under the current rules, any work time beyond 12 hours means the driver is no longer eligible for the short-haul exception and must prepare logs for that day. Furthermore, any work time beyond 12 hours that occurs more than 8 days in a 30-day period, means the driver must prepare daily RODS using an ELD unless otherwise excepted (see 49 CFR 395.8 (a)(1)(iii)(A)(*1*)). As a result, the carrier may choose to have their driver operate as though not eligible for the short-haul exception resulting in unnecessary ELD expenses.

The extension of the air-mile radius by 50 air-miles under the rule will afford drivers additional flexibility and allow carriers to reach customers farther from the work reporting location while maintaining eligibility for the short-haul exception. As noted above, FMCSA does not anticipate that extending the air-mile radius will result in increased VMT, and changes, if any, would be minimal. Extending the air-mile radius will not extend the duty day nor will it extend the maximum driving time. Rather, more carriers serving customers in the 100 to 150-mile range from their work reporting location might use the short-haul exception. While more drivers or more trips will now be eligible for the short-haul exception, and thus excluded from the requirement to take a 30-minute break or prepare daily RODS, the total costs of freight transportation will likely not change to such an extent that the quantity of trucking services demanded will increase.

FMCSA does not anticipate that the changes in this final rule would lower costs or prices to such an extent that it would stimulate demand in the freight market, but acknowledges that freight loads may shift from one carrier or driver to another. Total VMT is not expected to increase, and changes, if any, would be minimal.

FMCSA agrees with other commenters who state that changes to the current short-haul provision would provide increased flexibility for both motor carriers and drivers who utilize the exception. The Agency believes that both the extension of the 12-hour limit to 14 hours, and increase of the 100 air-mile radius to 150 air-miles will provide the necessary flexibility for drivers to spend quality time with customers, respond to changes in market demand such as peak holiday delivery times, and reduce the administrative burden of calculating how often a driver has gone beyond 12 hours or 100 air-miles in any 30-consecutive day period. As the changes to the short-haul exception will not extend the workday beyond the current long-haul driving window, FMCSA believes that the final rule would not negatively impact safety.

[55] U.S. DOT, FMCSA. "Regulatory Evaluation of Electronic Logging Devices and Hours of Service Supporting Documents Final Rule." November 2015. Available at: https://www.regulations.gov/document?D=FMCSA-2010-0167-2281 (accessed December 6, 2018).

Health and Safety Impacts

FMCSA does not anticipate that extending the air-mile radius would increase market demand for services, nor result in increased VMT. And changes to VMT, if any, would be minimal.

Additionally, the Agency emphasizes that the changes to the short-haul exception in its final rule would not allow any additional drive time during the duty day nor allow driving after the 14th hour from the beginning of the duty day. The employer must maintain accurate time records concerning the time the driver reports and is released from work each day. Therefore, FMCSA anticipates that this rule change would not affect the crash risk of drivers operating under the short-haul exception. A detailed analysis of available data tied to crash risk for short-haul operations is available in the RIA available in this docket.

It is possible that for individual drivers, changes to the short-haul provision could negatively impact air quality related to criteria pollutants, but, as noted above, FMCSA does not expect total VMT to change, and any additional mileage driven is expected to be offset by other drivers decreasing mileage in accordance with the new flexibility. While individual drivers may experience increased negative health impacts due to the potential for increased exposure to DPM and HDDV, FMCSA believes overall impacts will be *de minimis* as the increased flexibility resulting from the rule will not change overall market demand for driver services nor significantly alter driver behavior. Therefore, FMCSA believes these changes will be safety-neutral and not result in any significant health impacts to drivers.

ADVERSE DRIVING CONDITIONS

Overview

Under the current regulations, drivers qualifying for the HOS adverse driving conditions provision may drive no more than 2 additional hours beyond the maximum driving time allowed should they encounter adverse driving conditions after dispatch. The current regulations allow 2 additional hours of driving time for "adverse driving conditions," defined as "snow, sleet, fog, other adverse weather conditions, a highway covered with snow or ice, or unusual road and traffic conditions, none of which were apparent on the basis of information known to the person dispatching the run at the time it was begun." The current provision does not allow for the extension of the 14-hour driving window (or 15 hours on-duty for drivers of passenger-carrying CMVs), and thus cannot be used should an adverse condition be encountered towards the end of the workday.

In the final rule, FMCSA would allow a 2-hour extension of the 14-hour driving window (or 15 hours on-duty for drivers of passenger-carrying CMVs). This aligns the regulations with the intent of the adverse driving condition provision to allow drivers flexibility when faced with unexpected conditions. The final rule also modifies the definition of adverse driving conditions to mean: snow, ice, sleet, fog, or other adverse weather conditions or unusual road and traffic conditions that were not known, or could not be reasonably known, to a driver immediately prior to beginning the duty day or immediately before beginning driving after a qualifying rest break or sleeper-berth period or to a motor carrier immediately prior to dispatching the driver; and provides not more than 2 additional hours to complete a run or reach a place offering safety. The

modified definition recognizes the role of the driver in determining when adverse conditions are identified and plan the remainder of a trip accordingly.

The Final Action would not increase the available driving time but would allow drivers to use the available driving time should the adverse condition occur at the end of the 14-hour driving window.

Cost Impacts

The Final Action would increase flexibility by allowing drivers encountering adverse conditions to extend their driving window by the same 2-hour window that currently applies to driving time. The changes to the adverse driving conditions provision would provide drivers with additional options to determine the best solution based on their situation.

The Agency anticipates the increased options and flexibility of the final rule would result in cost savings to drivers but is unable to quantify these cost savings due to a lack of conclusive data regarding the use of the adverse driving conditions provision.

FMCSA is aware of two sources of data which could provide information on the use of the adverse driving conditions provision. Data available from VTTI[56] shows that one carrier, with ELD data from 1,000 drivers, reported use of the adverse driving condition provision 150 times in a 6-month period. However, each of the 1,000 drivers provided ELD data, but they did not report the data uniformly for the entire 6-month period. For example, some reported for the entire six-month period and some for only a portion of the time. For this reason, the total number of times the drivers indicated use of the adverse driving conditions provision cannot be normalized across all 1,000 drivers in the dataset or extrapolated across the entire CMV driver population. Another source of data on the use of the adverse driving condition provision is from OOIDA, which represents more than 160,000 members. The OOIDA Foundation conducted a brief, online survey in 2018. One question on the survey, which received 675 responses, was "How often do you currently utilize the adverse driving conditions exception?" The OOIDA members used the adverse driving conditions provision 1.5 times per month on average, with a median of 0.0 times per month.[57] This result implies that at least 50% of the respondents never use the provision. The frequency of use of the adverse driving conditions provision as reported by the VTTI and OOIDA data vary widely, making it difficult for the Agency to determine actual use of the provision among the driver population. While information from ELDs could be a source of data regarding the frequency of use for the existing provision, the Agency does not have access to much of the industry ELD data. It is also not clear that use of the provision would be uniformly indicated in ELD data.

Additionally, the Agency lacks information on the actual increases in efficiency that drivers experience when using the provision. The Agency expects that drivers would realize efficiency gains due to avoided losses in time spent trying to drive through adverse conditions or waiting

[56] Virginia Tech Transportation Institute. (2018). Phase II: Crash Risk by Driver Schedule. Task 3 Letter Report: Average Duty Status, Duty Period, and Status of the Hours-of-Service Rule Change by Driver.
[57] OOIDA Foundation, Sept. 6, 2018. "Hours of Service ANPRM Survey." available at: https://www.regulations.gov/document?D=FMCSA-2018-0248-3347 (accessed on November 26, 2018).

for those conditions to subside but acknowledges that each situation would be different. The proposal does not increase available driving time but may allow drivers to use the time that is available to them. For example, if a driver encounters adverse conditions when close to reaching the end of the 14-hour driving window, he or she must stop driving regardless of the available driving hours remaining. Under the Final Action, the driver could continue to operate for up to two additional hours beyond the 14-hour driving window, and potentially get to their intended destination prior to taking 10-hours off-duty.

The Agency believes that the Final Action could lead to increased efficiency resulting from the avoided losses in time spent trying to drive through adverse conditions or waiting for these conditions to subside. The Agency, however, lacks sufficient data to be able to aggregate these potential efficiency gains across industry.

Health and Safety Impacts

FMCSA is unable to quantitatively assess the impacts on safety from implementation of the Final Action due to a lack of data regarding the use of the adverse driving conditions provision. The Agency also lacks data on the relationship between crash risk and adverse driving conditions, and potential reductions in crash risk that result from the avoidance of these conditions.

The adverse driving conditions provision is intended to provide drivers flexibility to make up for lost time due to poor conditions or allow drivers time to locate a safe place to stop and wait out the adverse conditions. The Agency anticipates that the final rule would make this possible by allowing drivers to avail themselves of this flexibility when the adverse conditions occur later in the duty day. While the Agency is not aware of any research that is specific to the impact of adverse conditions on crash risk, the flexibility provided in the final rule would allow drivers to make decisions based on current conditions without penalizing them by "shortening" their driving window. Further, the Agency stresses that the final rule would not increase available driving time beyond that allowed under the current regulations.

While allowing a 2-hour extension of the 14-hour driving window (or 15 hours on-duty for drivers of passenger carrying CMVs) during adverse driving conditions would not increase the available driving time, the provision could increase either the amount of time drivers idle waiting out adverse driving conditions encountered at the end of the day or the distance they drive during a given work shift. Increased idling and driving time could contribute to driver and passenger exposure to DPM, HDDV, and impact local air quality and GHGs. The specific circumstances under which drivers would utilize the adverse driving conditions provision would vary both regionally and temporally and are currently unknown.

3.4 CUMULATIVE IMPACTS

In accordance with the CEQ NEPA implementing regulations at 40 CFR 1508.7, and FMCSA's Order 5610.1 on NEPA Implementing Procedures, Ch.1(C)(2), Appendix 1(6) and Checklist, (Question 6), FMCSA reviewed the potential impacts of the Final Action in conjunction with known past, present, and reasonably foreseeable future actions, both Federal and non-Federal, to determine if cumulative impacts could result.

FMCSA is unaware of other future planned actions that could contribute to cumulative environmental effects from the Final Action. Any positive or negative cumulative impacts that could result from implementation of the final rule would be in addition to those individual impacts to air quality and socioeconomics assessed in this EA.

The socioeconomic analysis conducted by FMCSA suggests significant positive effects that would result from implementation of the Final Action. The positive effects stem largely from added flexibilities that would be afforded drivers when the final rule takes effect. The economic analysis indicates drivers are unlikely to increase VMT under the final rule, and that changes, if any, would be minimal This is because no new markets are anticipated to be accessed by drivers that would qualify for the increased distances allowable under the short-haul provision. Should drivers increase mileage under the rule, or increase emissions, potential negative air quality and health impacts from exposure to such emissions could result.

The means to obtain data on such cumulative impacts are not known. This is due not only to the uncertainty of potential changes to emissions of each provision to property and passenger-carrying operations, but the combined effects and interactions of all provisions. Moreover, as noted in section 3.2.1, FMCSA cannot definitively predict any changes in emissions in locations where modifications to CMV operations may occur as a result of the Final Action. And emissions can be impacted by a range of local and regional conditions which can differ on a daily or even hourly basis. Any such impacts are not reasonably foreseeable and the means to obtain such data are unknown. Therefore, the Agency has no means to precisely predict the cumulative impacts of the rulemaking. However, no significant cumulative impacts are anticipated for the reasons discussed above.

3.5 CONCLUSIONS

FMCSA concludes that the final HOS rule could have beneficial and negative impacts on the quality of several environmental components described in this EA. FMCSA anticipates that an increase in the flexibility of drivers' schedules may result in a small degree of fuel savings based on efficiencies not possible under the current HOS regulations. Any fuel savings that may be experienced would result in lower air emissions and improved air quality related to criteria pollutants and GHGs. Socioeconomic cost savings include a quantified reduction in costs to motor carriers from changes in the 30-minute break rule, qualitative cost savings to drivers from changes to the 30-minute break rule, and qualitative cost savings to both motor carriers and drivers from changes to the sleeper-berth provision, short-haul exception, and adverse driving conditions provision.

Implementation of the final rule could also result in negative environmental, health, and safety impacts should drivers increase idling or VMT. While individual drivers may contribute to increased environmental or health and safety impacts, FMCSA believes overall impacts would be *de minimis* as the increased flexibility resulting from the final rule would not change overall market demand for driver services nor would it significantly alter driver behavior. Specific environmental, health, and safety impacts are summarized below:

- The changes to the 30-minute break provision do not involve any increases in daily driving time and are anticipated to be safety-neutral. However, some drivers could increase idling time and attendant emissions (although nothing in the final rule would exempt drivers from complying with state and local anti-idling laws);

- Changes to the short-haul provision could negatively impact air quality related to criteria pollutants for individual drivers, but FMCSA does not expect total VMT to change more than minimally, and any additional mileage driven is expected to be offset by other drivers decreasing mileage in accordance with the new flexibility afforded. Because total VMT changes if any, are expected to be minimal, the Agency does not anticipate changes in exposure or crash risk;

- Changes to the sleeper-berth provision would provide drivers greater operational flexibility, while affording the opportunity for the driver to obtain the necessary amount of restorative sleep. FMCSA anticipates that the increased flexibility provided by the final rule would not affect the safety outcomes achieved by the current sleeper-berth provision and would have no negative impact on emissions; and,

- While changes to the adverse driving provision allowing a 2-hour extension of the 14-hour driving window (or 15 hours on-duty for drivers of passenger carrying CMVs) would not increase the available driving time, the provision could increase the amount of time drivers idle waiting out adverse driving conditions encountered at the end of the day (although, as stated previously, nothing in the final rule would prevent drivers from complying with State and local anti-idling laws). Increased idling time could contribute to driver and passenger exposure to emissions, and impact local air quality and GHGs. The specific circumstances under which drivers would utilize the adverse driving

conditions provision would vary both regionally and temporally and cannot be predicted. FMCSA is unable to quantitatively assess the impacts on safety from the final rule due to a lack of data regarding the use of the adverse driving conditions provision.

The final rule would provide drivers with more flexibility to make decisions that best promote their own health and safety as well as economic well-being. While FMCSA does not have data forecasting specific driver behavior related to implementation of the revised rule, we expect that drivers will make choices limiting any negative impacts to their health and safety.

Despite the substantial uncertainties discussed in this EA and the possibility drivers elect to utilize provisions granting them flexibilities beyond those anticipated, FMCSA finds that the Final Action would not significantly affect the quality of the environment nor require conducting an EIS. As indicated in the above analysis, implementation of the final HOS rule has the potential to result in minor negative and positive impacts on air quality and driver and public health that neither individually nor collectively poses significant environmental impacts. Consequently, FMCSA will issue a FONSI and does not recommend the preparation of an EIS.

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 familiar with the potential environmental consequences that could result from implementing the Final Action.

The Agency received over 5,200 comments on the ANPRM, including more than 1,000 from CMV drivers. Commenters included trade associations and industry groups, law enforcement agencies, safety advocacy groups, motor carriers, and governmental entities.

No comments were submitted in response to the draft EA. As of November 27, 2019, FMCSA received 2,874 public comments regarding the 2019 NPRM. One comment on the notice was submitted by the National Transportation Safety Board.

4.2 LIST OF PREPARERS AND REVIEWERS

The following persons participated in the preparation of this EA:

Catherine Nadals, Environmental Specialist, contractor, Alliance Pointe, LLC.
Education: M.A. Anthropology (Northern Arizona University), B.A. Anthropology (University of Hawaii)
Experience: Over 15 years of experience as an environmental protection specialist for the Surface Transportation Board, Federal Transit Administration and Federal Highway Administration; 30 years of experience in environmental and historic preservation regulation.

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

Brian Dahlin, Chief, Regulatory Evaluation Division
Education: M.A. Economics (Duke University), B.S. Economics (University of Minnesota)
Experience: Over 16 years as a labor and transportation economist

Alan W. Strasser, Attorney Advisor
Education: B.A. Psychology (State University of New York College at Oneonta),
J.D. and M.S. in Environmental Law and Policy (Vermont Law School)
Experience: Over 23 years of experience in the environmental field

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

Larry W. Minor, Associate Administrator for Policy
Education: B.S. in Physics (American University, Washington, DC)

M.S. in Mechanical Engineering (George Washington University, Washington, DC)
Experience: Over 26 years of experience in federal regulations development

5. PUBLIC PARTICIPATION AND COMMENTS

5.1 Submitted Comments

No comments were received regarding the draft EA. A total of 2,874 comments were submitted in response to the NPRM.

5.2 Viewing Comments and Documents

To view comments FMCSA received in response to the NPRM, as well as any documents mentioned as being available in the docket, go to http://www.regulations.gov/#!docketDetail;D=FMCSA-2018-0248 and choose the document to review. If you do not have access to the Internet, you may view the docket online by visiting Docket Operations in Room W12-140 on the ground floor of the DOT West Building, 1200 New Jersey Avenue, SE, Washington, DC 20590-0001, between 9am and 5pm ET, Monday through Friday, except Federal holidays.