Institute *for* Policy Integrity

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VIA ELECTRONIC SUBMISSION

Attn: Mr. Thomas Yager, Chief, Driver and Carrier Operations Division,
Federal Motor Carrier Safety Administration, U.S. Department of Transportation,
1200 New Jersey Avenue, S.E., Washington, DC 20590

Subject: Comments on Proposed Revision to the Hours of Service Regulation for Property-Carrying Commercial Motor Vehicles, 75 Fed. Reg. 82170 (Dec. 29, 2010), Docket No. FMCSA-2004-19608

The Institute for Policy Integrity submits the following comments on the Federal Motor Carrier Safety Association's ("FMCSA") proposed revisions to its hours of service regulation for drivers of property-carrying commercial motor vehicles ("HOS regulation").

The Institute for Policy Integrity at New York University School of Law is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy.

The HOS regulation has a long history. It was promulgated in 1937 pursuant to the Motor Carrier Act of 1935,[1] amended a year later, and has remained relatively unchanged since. Key provisions of the 1937 rule (as amended) included: a daily driving limit (10 hours within any 24-hour period); a daily off-duty requirement (8 consecutive hours per day); a sleeper-berth exception to the off-duty requirement; and a weekly on-duty limit (60 hours in 7 days, or 70 hours in 8 days).[2] One significant change was made to the rule: in 1962, the 24-hour limit was dropped, enabling drivers to drive for 10 hours, take 8 hours off, and start driving again.[3]

In 2003, FMCSA promulgated a new HOS regulation. A nearly continual process of litigation and revision ensued. The 2003 rule and its successors have adjusted key provisions of the 1935 rule, but retained its basic structure. The 2003 rule increased the daily driving limit to 11 hours, decreased the daily on-duty limit to 14 hours, increased the daily off-duty requirement to 10 hours, and added a 34-hour restart provision.[4] After the D.C. Circuit Court of Appeals vacated the 2003 rule,[5] FMCSA issued a new, minimally revised HOS regulation in 2005.[6] When the D.C. Circuit again

[1] Order in the Matter of Maximum Hours of Service of Motor Carrier Employees, 3 Fed. Reg. 7 (Jan. 4, 1937).

[2] Order in the Matter of Maximum Hours of Service of Motor Carrier Employees, 3 Fed. Reg. 1875 (July 28, 1938). *See also* Hours of Service of Drivers; Driver Rest and Sleep for Safe Operations, 65 Fed. Reg. 25,540, 25,547-48 (May 2, 2000). The sleeper berth exception permitted drivers to satisfy the 8-hour off-duty requirement by spending two periods in the vehicles sleeper berth, which, added together, totaled 8 hours. A daily on-duty limit (15 hours) was included in 1937, but rescinded in 1938. *Id.* at 25,547-48.

[3] Hours of Service of Drivers; Driver Rest and Sleep for Safe Operations, 65 Fed. Reg. at 25,548.

[4] Hours of Service of Drivers; Driver Rest and Sleep for Safe Operations, 68 Fed. Reg. 22456, 22457 (Apr. 28, 2003) (to be codified at 49 CFR pts. 385, 390, 395).

[5] *Pub. Citizen v. FMCSA*, 374 F.3d 1209, 1211 (D.C. Cir. 2004) (vacating HOS regulation as arbitrary and capricious because agency failed to consider driver health).

vacated key provisions of the rule (the 11-hour daily driving limit and the 34-hour restart),[7] FMCSA issued an interim final rule[8] and, in 2008, a final rule that reinstated those provisions.[9] A petition to the D.C. Circuit for review of the 2008 rule is in abeyance, pursuant to a settlement that requires FMCSA to promulgate a final HOS regulation by July 26 of this year.[10]

The proposed HOS regulation has two goals: safety and driver health. The Motor Carrier Safety Act of 1984 requires the Secretary of Transportation to ensure that the physical condition of commercial motor vehicle ("CMV") drivers does not impair their ability to drive safely,[11] and that the operation of CMVs "does not have a deleterious effect on the physical condition of drivers."[12] The D.C. Circuit has emphasized that the 1984 legislation requires FMCSA to consider the impact of its regulations on drivers' health in addition to, and independent from, safety-related health concerns.[13]

FMCSA is charged with regulating to produce *optimal* safety and health outcomes. The statute does not proscribe an "amount" of safety, nor does it specify the extent to which drivers' physical health should be protected. Standard economic theory suggests that mandating more stringent restrictions upon drivers' working patterns will reduce wages, even if the effect is not immediate. This is because, in functioning markets, increased wages compensate for suboptimal working conditions. Assuming CMV drivers are compensated for the safety and health risks they face, their real wages will decline as those risks diminish. As a result, the HOS regulation is only justified to the extent it increases net *social* benefits, which it can accomplish by addressing the market distortions that prevent the trucking industry from achieving the optimal trade-off between safety and health precautions and wages. To regulate effectively, FMCSA should identify the ways in which the trucking industry currently achieves sub-optimal safety and driver health outcomes, and should correct for those market failures.

There are three distortions that contribute to sub-optimal safety and health outcomes. The first is cognitive error: drivers may discount the safety and health consequences of prolonged driving periods and of chronic fatigue. The second is information asymmetry: drivers may not know the full health risks associated with sleep deprivation, sedentary lifestyles, and specific job hazards, including exposure to Diesel Exhaust. Additionally, they may not know the extent to which fatigue impairs performance. As a result, drivers may undervalue driving time limits, breaks, and regular

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[6] "Today's rule requires all drivers of property-carrying commercial motor vehicles (CMVs) in interstate commerce to take at least 10 consecutive hours off duty before driving, limits driving time to 11 consecutive hours within a 14-hour, non-extendable window after coming on duty, and prohibits driving after the driver has been on duty 60 hours in 7 consecutive days, or 70 hours in 8 consecutive days. Drivers may restart the 60- or 70- hour 'clock' by taking 34 consecutive hours off duty. *These provisions are the same as those of FMCSA's 2003 final rule that was vacated by the U.S. Court of Appeals for the D.C. Circuit.*" Hours of Service of Drivers, 70 Fed. Reg. 49,978, 49,980 (Aug. 25, 2005) (to be codified at 49 CFR pts. 385, 390, 395) (emphasis added).

[7] *Owner-Operator Indep. Drivers Ass'n v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 212 (D.C. Cir. 2007).

[8] Hours of Service of Drivers, 72 Fed. Reg. 71,247, 71,249 (codified at 49 C.F.R. pts. 385, 395) (Dec. 17, 2007).

[9] Hours of Service of Drivers, 73 Fed. Reg. 69567 (Nov. 19, 2008) (to be codified at 49 CFR pts. 385, 395); Hours of Service of Drivers, 75 Fed. Reg. 82,170, 82,173 (proposed Dec. 29, 2010) (to be codified at 49 CFR pts. 385, 386, 390, 395).

[10] Hours of Service of Drivers, 75 Fed. Reg. at 82,173.

[11] 49 U.S.C. §§ 31135(a)(2)-(3) (2006).

[12] 49 U.S.C. § 31135(a)(4).

[13] *Pub. Citizen*, 374 F.3d at 1217 ("[T]he statute requires the agency to consider the impact of the rule on 'the physical condition of the operators,' not simply the impact of driver health on commercial motor vehicle safety. . . . It is one thing to consider whether an overworked driver is likely to drive less safely and therefore cause accidents. Whether overwork and sleep deprivation have deleterious effects on the physical health of the driver is quite another."); *see also* 49 U.S.C. § 31135(a)(4).

opportunities for sufficient sleep, both when they negotiate their schedules with their employers and when they decide how to allocate their time while on the job.[14]

The third distortion is that trucking companies do not absorb the entire cost of CMV crashes or of driver health impairments. For example, when a CMV is involved in a crash, the trucking company will never absorb the economic costs of congestion. Tort damages, if paid, may fall short of the actual cost to injured parties and property.[15] As a result, companies do not have an incentive to produce socially optimal levels of CMV safety.

Similarly, to the extent that truckers are eligible for unemployment or disability benefits, or require medical assistance not paid for by the company, society bears part or all of the cost of their poor health. Even if companies pay the medical costs related to obesity and other health conditions truckers experience at a disproportionately high rate, they do not absorb other significant costs incurred by truckers. These include diminution in quality of life, premature death, and inability to work. Employers absorb on-the-job productivity losses, but not productivity losses at home. In sum, trucking companies may *benefit* from hiring fewer truckers to drive longer hours with fewer breaks, but absorb significantly less than the full *cost* of the associated safety risks and the adverse health outcomes. As explained below, FMCSA should design the HOS regulation to correct for these externalities.

A more thorough analysis of the proposed HOS regulation is necessary to ensure that the final regulation maximizes net social benefits. Specifically, FMCSA should:

- Conduct a cost-benefit analysis of *each* key provision of the proposed regulation, and consider meaningful alternatives for each key provision;
- Analyze the proposed rule's effect on driver exposure to Diesel Exhaust;
- Conduct a threshold analysis of morbidity reduction benefits;
- Consider a more fundamental revision to the HOS regulation in the near future;
- Take further steps to increase compliance; and
- Consider additional measures to increase safe practices.

I. FMCSA Should Conduct a Cost-Benefit Analysis and Consider Meaningful Alternatives for Each Key Provision of the Regulation

FMCSA should improve its calculation of the costs and the benefits of the HOS regulation by assessing each key provision independently and in comparison to meaningful alternatives. Thorough cost-benefit analysis is required under Executive Orders 12,866 and 13,563, as is consideration of meaningful alternatives.[16] Executive Order 12,866 provides that "[c]osts and benefits" must be understood by agencies "to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are

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[14] Even if CMV drivers accurately value safety and health practices, they may still negotiate suboptimal contracts. For example, it may be difficult for drivers who work as independent contractors to quantify the *marginal* safety and health impact of each job. Related, employers are likely to resist compensating independent contractors for long-term health risks.

[15] *See* A. Mitchell Polinsky & Steven Shavell, *Punitive Damages: An Economic Analysis*, 111 HARV. L. REV. 869, 939 (1998) (arguing that tortfeasors must pay for the *entire* harm caused in order to create incentives to take socially optimal levels of precaution, and noting not all harms are covered by compensatory damages); *see also* Steven Shavell, *Liability for Harm versus Regulation of Safety*, 13 J. LEGAL. STUD. 357, 360-62 (1984) (noting that "liability [does] not furnish adequate incentives to control risk" when tortfeasors cannot pay for the full magnitude of harm done, or when they carry liability insurance that does not link premiums to safety practices).

[16] Exec. Order No. 12,866 §§ 1(a), 6(3)(C)(iii), 58 Fed. Reg. 51,735, 51,735, 51,741 (Oct. 4, 1993) (codified at 45 C.F.R. pt. 88); Exec. Order No. 13,563 § 1(b), 76 Fed. Reg. 3821, 3821 (Jan. 18, 2011) (affirming cost-benefit principles specified in Exec. Order 12,866).

difficult to quantify, but nevertheless essential to consider."[17] In addition, Executive Order 12,866 requires agencies to consider "costs and benefits of potentially effective and reasonably feasible alternatives to the planned regulation identified by the agencies or the public."[18] Comprehensive cost-benefit analysis and considering meaningful policy alternatives are also key elements in constructing good policy.[19]

FMCSA did conduct cost-benefit analysis for portions of its proposed rule. However, it did not conduct any cost-benefit analysis for some important provisions, and only considered a portion of the potential effects of alternative policies. Moreover, when conducting its analysis for selected provisions, the agency aggregated several of the proposed changes into one "lump-sum" policy choice, thus failing to consider the costs and benefits of each of these provisions individually. And for all but the maximum driving limit, the agency failed to consider alternatives to the proposed changes. Finally, for the provisions of the rule for which the agency did conduct a cost-benefit analysis, it did not attempt to quantify the following ancillary, yet significant effects: an associated increase or decrease in congestion, driver exposure to Diesel Exhaust (see Section II), and morbidity (see Section III). In sum, out of the many changes proposed under the HOS regulation, the agency only conducted a robust cost-benefit analysis of the maximum driving limit.

FMCSA Did Not Conduct Cost-Benefit Analysis for the 16-hour Driving Window Provision or the Specific Break Requirement Proposed under the HOS Regulation

Under the proposed rule, drivers would be allowed to extend the 14-hour driving window to 16 hours two times per week.[20] Since the same on-duty and driving limits would apply on days when drivers utilize the 16- and 14-hour driving windows, drivers would spend more time off-duty during the course of driving on their 16-hour days.[21] The occasional 16-hour window was justified in the proposed rule as giving drivers the flexibility to rest and to respond to unanticipated events, one of FMCSA's explicit goals.[22] The 16-hour option responds to drivers' frustrations, expressed to FMCSA at public listening sessions, regarding the 14-hour window.[23] Drivers argued that because of the 14-hour window they felt pressure to drive when they were tired or to drive through rush hour rather than pulling over, for example, since breaks were included in the 14-hour window.[24] Drivers specifically proposed that either breaks be excluded completely from the 14-hour window or that the driving window be extended to 16 or 18 hours.[25]

FMCSA explicitly states that it did not attempt to conduct a cost-benefit analysis for the 16-hour driving window provision. The agency justified this decision on the basis that "the use of this provision is voluntary" and therefore "carriers would want to use it only when they expect it to

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[17] Exec. Order No. 12,866, *supra* note 16, § 1(a) at 51,735; *see also* Exec. Order No. 13,563, *supra* note 16, § 1(a) at 3821. ("Our regulatory system must . . . take into account benefits and costs, both quantitative and qualitative. . . . It must measure, and seek to improve the actual results of regulatory requirements").

[18] Exec. Order No. 12,866, *supra* note 16, § 6(3)(C)(iii) at 51,741.

[19] Winston Harrington, Lisa Heinzerling, & Richard D. Morgenstern, *Controversies Surrounding Regulatory Impact* Analysis, *in* REFORMING REGULATORY IMPACT ANALYSIS: RESOURCES FOR THE FUTURE REPORT 10, 14 (Winston Harrington, Lisa Heinzerling, & Richard D. Morgenstern eds., 2009).

[20] Hours of Service of Drivers, 75 Fed. Reg. at 82,171.

[21] *Id.*

[22] *Id.*

[23] *Id.* at 82,174.

[24] *Id.*

[25] *Id.*

improve their productivity."[26]

The failure to conduct a cost-benefit analysis on the 16-hour window is problematic for several reasons. First, once an agency undertakes a cost-benefit analysis and then relies on that analysis in its rulemaking, it must examine all aspects of the problem.[27]

Second, FMCSA's reasoning is unsound. The fact that the decision to utilize the 16-hour driving window is voluntary does not relate to whether it will be used frequently, or whether it imposes net costs or benefits. Further, under this reasoning, almost no provision in the rule would require a cost-benefit analysis because a driver's decision to drive the maximum number of hours or spend the maximum number of hours on duty, for example, is never required but is similarly voluntary. The explanation implies a connection between voluntariness and use, suggesting FMCSA believes that the 16-hour window will not be used frequently.

In fact there is reason to expect the opposite. When the 34-hour restart provision, also a "voluntary provision," was introduced, the agency similarly assumed that use of the restart would be limited.[28] This assumption was proven incorrect when drivers and carriers testified at FMCSA listening sessions that not only do they use it regularly, but also that they use it "to add one work shift a week."[29] Given that the agency knows that "many, but not all"[30] drivers object to the 14-hour driving window and that the drivers themselves suggested an across-the-board increase in the driving window, there is strong reason to believe that many drivers intend to utilize the maximum driving window as frequently as they are permitted.

Additionally, the 16-hour driving window provision is problematic because, without any consideration of its costs and benefits or comparison to alternatives, it appears to have been arbitrarily selected. FMCSA should be more explicit about its reasons for choosing a 16-hour driving window twice per week as opposed to alternatives: for example, why 16 and not 18 hours, why twice per week and not three times per week, and why not simply make 16 hours the daily maximum driving window?

If FMCSA does not believe drivers will use the 16-hour provision then it should not include it and further complicate a rule that it is hoping to keep simple and easy to follow.[31] If, on the other hand, FMCSA anticipates that the provision will be used regularly, it should conduct a cost-benefit analysis based on an assumption that all drivers will use it the maximum allowable times per week, in order to capture the full impact the rule could have on productivity, health, and safety. Additionally, the agency should compare the costs and benefits of the 16-hour window against a

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[26] FMCSA, *Regulatory Impact Analysis for the Proposed Hours-of-Service (HOS) Rule* (2010), ES-4 (hereinafter "FMCSA 2010 RIA").

[27] *See Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1198 (9th Cir. 2008) (holding that once an agency voluntarily decides to rely on a cost-benefit analysis, "it cannot put a thumb on the scale by undervaluing the benefits and overvaluing the costs" in an arbitrary and capricious manner); *Pub. Citizen v. FMCSA*, 374 F.3d 1209, 1217-19 (D.C. Cir. 2004) (finding agency's rulemaking to be "troubling" because it relied on a "questionable" cost-benefit analysis that employed "dubious" assumptions and distorted the costs and benefits). *See also Am. Fed'n of Labor & Cong. of Indus. Orgs. v. OSHA*, 965 F.2d 962, 975 (11th Cir. 1992) (holding that an agency may not combine multiple parts into one rule and then fail to analyze each part completely).

[28] Hours of Service of Drivers, 75 Fed. Reg. at 82,182.

[29] *Id.*

[30] *Id.* at 82,174.

[31] *Id*. at 82,185.

range of meaningful alternatives.[32]

FMCSA also admitted to "not explicitly modeling" the requirement that drivers take at least one 30-minute off-duty break every seven hours of driving.[33] The agency rationalized this provision based on research that indicates that working continuously without breaks is unsafe and unhealthy.[34] Unlike with the 16-hour provision, the agency did not give a justification for deciding not to conduct a thorough cost-benefit analysis; however, it raises similar concerns. Without a thorough cost-benefit analysis it is difficult to determine whether the break requirement will yield the maximum possible net benefits. In addition, the decision to choose a maximum of seven hours of driving with a minimum 30-minute break rather than any other combination appears arbitrary.

FMCSA Did Not Consider Meaningful Alternatives for Its Proposed Changes

As noted above, Executive Orders 12,866 and 13,563 require agencies to consider effective and feasible alternatives to their proposed regulations in their cost-benefit analyses.[35] Indeed, the evaluation of alternatives is an essential ingredient of sound policy analysis.[36] While there is no minimum number of alternatives to assess in order for the analysis to be meaningful, agencies should consider "the full set of options deemed to be technically feasible and legally defensible."[37] In addition to considering multiple alternatives for a provision, an agency should consider alternatives for as many of its provisions as feasible.[38] FMCSA did not meet these standards.

FMCSA created four policy options.[39] Option 1 was to maintain the current rule, in place since 2008, to serve as the baseline against which Options 2, 3, and 4 are evaluated. Since the three alternative policy designs the agency analyzed vary only by the maximum driving limit, the agency did not analyze alternatives to any of the other proposed changes. The agency effectively looked for an optimal rule based on the constraints they imposed rather than attempting to optimize all of the elements of the rule. The agency should analyze a series of alternatives to each provision of the HOS regulation in order to determine the combination that yields the highest net benefits.

FMCSA's Cost-Benefit Analysis Model Only Captured the Full Costs and Benefits of Changing the Maximum Driving Limit

FMCSA compared the costs and benefits of each of its policy options.[40] Options 2, 3, and 4 all required drivers to break during the day, limited daily on-duty time to 13 hours, and limited use of the 34-hour restart to once every 168 hours with at least two nights off-duty.[41] The options differ

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[32] Exec. Order No. 12,866, *supra* note 16, § 6(3)(C) at 51,741 (analyses should evaluate the costs and benefits of not only the preferred regulatory action, but also of any "reasonably feasible alternatives"); Exec. Order No. 13,563, *supra* note 16, § 1(b) at 3821.

[33] FMCSA 2010 RIA, *supra* note 26, at ES-4. Note that the cost-benefit analysis did consider the requirement of a break during the day but did not analyze the effect of specifically requiring a 30-minute break every seven hours. *Id.* at ES-1 and ES-4.

[34] Hours of Service of Drivers, 75 Fed. Reg. at 82,172.

[35] *See supra* note 18 and accompanying text.

[36] Some scholars assert it is the most important element of policy analysis. *See, e.g.*, Wendy E. Wagner, *The CAIR RIA: Advocacy Dressed Up as Policy Analysis*, *in* REFORMING REGULATORY IMPACT ANALYSIS: RESOURCES FOR THE FUTURE REPORT, *supra* note 19, at 70.

[37] Winston Harrington, Lisa Heinzerling, and Richard D. Morgenstern, *What We Learned*, *in* REFORMING REGULATORY IMPACT ANALYSIS: RESOURCES FOR THE FUTURE REPORT, *supra* note 19, at 222.

[38] OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, OMB CIRCULAR A-4, REGULATORY ANALYSIS 7 (2003) (instructing agencies to consider alternatives for "some or all of a regulation's attributes or provisions").

[39] FMCSA 2010 RIA, *supra* note 26, at ES-1.

[40] *Id.*

[41] *Id.*

only in the maximum daily driving hours. The limit was 10 hours under Option 2, 11 hours under Option 3, and 9 hours under Option 4.[42]

Since Options 2, 3, and 4 are identical with respect to every provision except the maximum daily driving time, FMCSA was only able to consider the aggregate costs and benefits. In effect, no meaningful analysis was conducted on the effects of the 13-hour daily on-duty limit, the break requirement, or the changes to the restart provision, despite judicial precedent indicating that the changes must be disaggregated for the purpose of analysis.[43] To be able to fully analyze the effects of each provision, the agency should conduct a more comprehensive cost-benefit analysis where it disaggregates each policy option into its core components, and analyzes the costs and benefits of variations on those components.

FMCSA Explicitly Did Not Consider Some of the Circadian Benefits of the Proposed Changes to the Restart Provision

Although the agency did attempt to conduct a cost-benefit analysis for the proposed two-night requirement for the restart provision, it acknowledged that it did not fully quantify the circadian-related benefits of the requirement.[44] Conversely, all costs associated with the provision were incorporated.[45] This may result in a skewed cost-benefit analysis, which makes the provision appear more expensive than it is. It is unclear from the agency's explanation whether FMCSA could not quantify the effects but attempted to factor them into the analysis qualitatively, or whether the agency assigned them a zero value. An agency should not assign a zero value to effects simply because those effects are uncertain.[46] At the very least, FMCSA should assign some sort of nonzero value (qualitative or quantitative) to these possible effects.[47] Given that the agency is proposing the requirement, in spite of the understated benefits, incorporating the missing benefits would likely have no impact on its present proposal. However, added to the omission of the morbidity reduction benefits (see Section II), the omission may affect FMCSA's assessment of its policy alternatives, making more stringent options seem undesirable.

FMCSA Did Not Incorporate the Effects of Congestion Associated With Any of the Proposed Changes into its Cost-Benefit Analysis

The agency did not attempt to analyze the effects of the proposed rule on congestion. In its RIA, FMCSA noted "total driving is likely to drop slightly because higher rates for shippers are likely to lead to a small shift from truck to rail while the requirement to take 2 nights off before restarting will in some cases encourage slightly more driving during the day."[48] It is unclear from this explanation whether the agency believed such analysis unnecessary because there would be no net change in congestion as a result of the rule, or whether the agency felt that the effects of an increase or decrease in congestion on productivity, health, and safety could not fully be quantified.

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[42] *Id.*

[43] *In re United Mine Workers of Am. Int'l Union*, 190 F.3d 545, 555 (D.C. Cir. 1999) (holding that an agency must examine the effects of each part of a rule); *Am. Fed'n of Labor & Cong. of Indus. Orgs. v. OSHA*, 965 F.2d 962, 975 (11th Cir. 1992) (holding that an agency may not combine multiple parts into one rule and then fail to analyze each part completely).

[44] FMCSA 2010 RIA, *supra* note 26, at ES-4-5.

[45] *Id.* at ES-5.

[46] *See infra* note 85 and accompanying text.

[47] 49 U.S.C. § 31,136(c)(2)(A) (requiring FMCSA to "consider, to the extent practicable . . . [the] costs and benefits" of any proposed regulation).

[48] FMCSA 2010 RIA, *supra* note 26, at 6-10.

The American Trucking Association has previously argued, however, that decreasing the maximum driving and on-duty hours will create the need for additional drivers.[49] If correct, this could increase congestion, an additional factor the agency did not identify. Conversely, fewer CMV accidents would likely reduce congestion. At the very least, FMCSA should attempt to identify all the provisions which may impact congestion, negatively or positively, before concluding there will be no net impact. Additionally, if FMCSA cannot fully quantify the impact, it should attempt to at least take it into account rather than excluding it from the analysis completely.[50] As noted above, costs associated with an increase in congestion will not fully be absorbed by a carrier sending out more trucks in response to changes in the regulations, thus making it a particularly important factor for FMCSA to consider.

II. FMCSA Should Analyze the Proposed Rule's Effect on Exposure to Diesel Exhaust

FMCSA has not analyzed the effect of the proposed rule on several health risks (including exposure to particulate matter in Diesel Exhaust, noise, and vibration) because the agency believes its 2005 conclusions with respect to those health risks remain sound.[51] FMCSA should analyze the impact of the proposed HOS regulation on driver exposure to Diesel Exhaust ("DE") because the rule is likely to change existing exposure levels and because the agency's 2005 assessment was deficient.

In a recent proposed rulemaking to address greenhouse gas emissions and fuel efficiency standards for medium- and heavy-duty engines and trucks,[52] the Environmental Protection Agency ("EPA") and the National Highway Traffic Safety Administration ("NHTSA"), noted that long-haul drivers leave their trucks idling during FMCSA-mandated rest periods.[53] The agencies explained that:

> Extended idle occurs when Class 8 long haul drivers rest in the sleeper cab compartment during rest periods as drivers find it both convenient and less expensive to rest in the truck cab itself than to pull off the road and find accommodations. During this period, a driver will idle the truck in order to provide heating or cooling or run on-board appliances. In some cases the engine can idle in excess of 10 hours. During this period, the truck will consume approximately 0.8 gallons of fuel and emit over 8,000 grams of CO_2 per hour. An average truck can consume 8 gallons of fuel and emit over 80,000 grams of CO_2 during overnight idling in such a case.[54]

The phenomenon of extended idling periods is significant because the adverse health effects of DE exposure depend on the degree and duration of exposure.[55] When a truck idles, it generates greater DE exposure than when the truck is moving.[56] In its 2005 rulemaking, FMCSA acknowledged the possibility that CMV drivers leave trucks idling during rest periods, but did not attempt to quantify

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[49] Hours of Service of Drivers, 75 Fed. Reg. at 82,180. The American Trucking Association further argued that the need for additional drivers would pose a risk to public safety on the assumption that less experienced drivers would be hired as a result. *Id.* Policy Integrity does not offer any evaluation of this argument, although FMCSA itself found that the concern regarding inexperienced drivers is likely overstated. *Id.*

[50] Exec. Order No. 12,866, *supra* note 17, § 1(a) at 51,735 ("Costs and benefits" must be understood by agencies "to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider.").

[51] Hours of Service of Drivers, 75 Fed. Reg. at 82,178.

[52] Greenhouse Gas Emissions Standards and Fuel Efficiency Stands for Medium- and Heavy-Duty Engines and Vehicles, 75 Fed. Reg. 74,152 (proposed Nov. 30, 2010) (to be codified at 49 CFR pts. 523, 534, 535).

[53] *Id.* at 74,185.

[54] *Id.*

[55] Hours of Service of Drivers, 70 Fed. Reg. at 49,984.

[56] *Id.*

those periods of DE exposure.[57] In addition, FMCSA argued in 2005 that CMV drivers' DE exposure would be reduced by EPA "initiatives to reduce truck idling"[58]; EPA and NHTSA's recent explanation that extended idling is a continued problem detracts from the force of that reasoning. Moreover, there is reason to believe that extended idling will remain a problem for the foreseeable future. The EPA/NHTSA regulation does not require CMV manufacturers to install anti-idling technology.[59] Even if some manufacturers do so voluntarily going forward, there will still be a time lag before the technology penetrates the market, and the EPA/NHTSA regulation only covers new vehicles, not the existing fleet.

Additionally, FMCSA's proposed HOS regulation may *further* increase CMV idling time. The agency has proposed modifying the definition of "on-duty" to exclude "time spent resting in or on a parked CMV," in order to facilitate flexible and comfortable rest opportunities for drivers whose CMVs do not have sleeper berths.[60] FMCSA should investigate whether, as a result of the changed definition, drivers who formerly rested outside their vehicles will now take "off-duty" time in a parked, but idling, CMV.

In 2005, the Agency stated: "while DE probably entails some risk to drivers . . . it is the Agency's best judgment that, compared to the pre-2003 rule, today's rule neither causes nor exacerbates the risk."[61] This conclusion was based on two problematic assumptions.

First, the agency assumed that the 2003 rule had not increased total work hours.[62] However, it did not examine the impact of individual provisions on work hours. Even if the rule *in toto* did not increase total hours worked, key provisions like the daily driving limit and the 34-hour restart provision may have increased work hours, especially for drivers who work the heaviest schedules, and who therefore face the greatest DE-related health risks. In addition, FMCSA concluded that the 2003 rule had not increased total work hours by comparing studies that used incompatible methodologies. The study that measured average hours worked *before* the 2003 rule used a survey method.[63] The authors purposefully avoided using drivers' logbooks, based on evidence that drivers under-report the hours they work.[64] Yet to measure average hours worked *after* the 2003 Rule, FMCSA evaluated drivers' logbooks.[65] In effect, FMCSA may have compared *all* hours worked

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[57] *Id*. ("Idling time at terminals, in traffic jams, or while using a sleeper berth presumably generates higher exposure than does highway driving, but estimating the possible combinations of conditions for a large population of drivers is difficult").

[58] *Id.*

[59] Greenhouse Gas Emissions Standards and Fuel Efficiency Stands for Medium- and Heavy-Duty Engines and Vehicles, 75 Fed. Reg. at 73,185 ("[T]he agencies are not mandating the use of idle reductions or idle shutdown, but rather allowing their use as one part of a suite of technologies feasible for reducing fuel consumption and meeting the proposed standards.").

[60] Hours of Service of Drivers, 75 Fed. Reg. 82,183.

[61] Hours of Service of Drivers, 70 Fed. Reg. at 49,987.

[62] *Id.* at 49,984.

[63] Kenneth L. Campbell & Michael H. Belzer, Hours of Service Regulatory Evaluation Analytical Support, Task 1: Baseline Risk Estimates and Carrier Experience, Final Report 104 (2000), cited in 70 Fed. Reg. at 49,984.

[64] *Id.* at 104 ("We carefully asked drivers what work they performed…We did not want drivers to tell us what hours they logged and otherwise to make judgments on what constituted "work" because we believe drivers will tend to report only those hours claimed for purposes of pay…we found that drivers work a significant number of unpaid hours, contributing to potential underreporting problems.").

[65] Hours of Service of Drivers, 70 Fed. Reg. at 49,984; FMCSA 2008 RIA at 17.

before 2003 to *reported* hours worked after 2003, despite evidence of significant violations of work-hour limits.[66]

The agency's 2005 conclusion that the HOS regulation did not exacerbate DE exposure was also based on a prediction that *baseline* DE exposure would decline over time, due to EPA regulatory programs, reduced vehicle diesel emissions, and reduced truck idling time.[67] Whether or not the agency's 2005 prediction was accurate, projecting a baseline shift in DE exposure does not obviate the need to analyze the *regulation*'s impact on DE exposure, or to explore policy options for reducing DE exposure.

FMCSA has a statutory mandate to assess the impact of its proposed rules on major health risks, like those associated with DE exposure.[68] The agency should revisit its 2005 conclusions regarding DE exposure under the HOS regulation by taking into account time spent resting in idling CMVs. It should also quantify, to the extent possible, any increase in DE exposure associated with the "on duty" provision.

Including DE exposure in the analysis may have important implications for the HOS regulation. At one extreme, doing so may sufficiently alter the cost-benefit analysis to make Option 4 the preferred alternative, especially if morbidity reduction benefits alter the cost-benefit analysis in the same direction (see Section III). Analyzing the impact of individual provisions on DE exposure would also be extremely useful. Crucially, the analysis would enable FMCSA to compare its proposed provisions to other feasible alternatives that might increase or decrease levels of DE exposure. Understanding the DE exposure implications of each policy option would enable the agency to craft a regulation that maximizes net social benefit. In addition, a comprehensive analysis of the impact of the proposed HOS regulation on DE exposure would help FMCSA determine whether additional measures to reduce DE exposure are required.

III. FMCSA Should Quantify Morbidity Reduction Benefits

FMCSA has limited its quantitative assessment of driver health benefits to the *mortality* effects of increased sleep.[69] The cost-benefit analysis did not incorporate *morbidity* reduction benefits, which are also linked to reduced work hours and increased sleep.[70] The principle problem with omitting morbidity reduction benefits, as with omitting DE exposure or *any* significant factor from the analysis, is that it is impossible to identify the optimal rule. In this case, FMCSA appears to have concluded that a 9-hour driving limit is undesirable without considering important, but unquantified, benefits.

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[66] Campbell & Belzer, *supra* note 63, at 104 ("the data suggest a broad pattern of violation, with the top 10 percent of all drivers averaging 94 hours").

[67] Hours of Service of Drivers, 70 Fed. Reg. at 49,987.

[68] The studies the agency considered in 2005 demonstrated that DE was a "probable" human carcinogen, and a likely cause of respiratory problems. Hours of Service of Drivers, 70 Fed. Reg. at 49,984-85.

[69] Hours of Service of Drivers, 75 Fed. Reg. at 82,188.

[70] *Id.* at 82,188; FMCSA 2010 RIA, *supra* note 26, at 5-1 ("[Health benefits of the proposed HOS regulation] result from reductions in mortality risk due to decreases in total duty time in a day and in a week, and thus possible increases in sleep. Although there are other health impacts mitigated by reductions in long work hours and related increases in sleep, such as improvements in many chronic health problems, reduction in mortality risk was the impact that was most easily quantifiable. Another possible impact of long work hours is the foregone earnings that would result if a driver were to develop a medically disqualifying condition and reductions in driver-associated health costs. Other than this qualitative discussion, we do not consider the possible benefits of reductions in medically disqualifying conditions or health care cost reductions in this analysis."); *see also*, CTRS. FOR DISEASE CONTROL AND PREVENTION, *Perceived Insufficient Rest or Sleep – Four States, 2006*, MORBIDITY AND MORTALITY WEEKLY REPORT, Feb. 29, 2008, at 2 ("Sleep disorders and sleep loss are associated with mental distress, depression, anxiety, obesity, hypertension, diabetes, high cholesterol, and adverse health behaviors such as cigarette smoking, physical inactivity, and heavy drinking").

Incorporating morbidity reduction benefits (and associated benefits, like health care cost reductions, and a reduced incidence of medically disqualifying conditions) may change FMCSA's assessment of the four options it has presented. Moreover, incorporating morbidity reduction benefits into the analysis would help FMCSA assess the utility of individual provisions of the rule. For example, analyzing morbidity reduction benefits could help FMCSA assess the relative value of its proposed break provisions, or point to other alternative policies the agency should consider.

When cost-benefit analysis is performed correctly, it values and weighs not only purely financial and economic effects, but also the entire range of effects of an agency rulemaking, including effects on health and safety.[71] As noted in Section I, both Executive Orders 12,866 and 13,563 require agencies to consider *all* essential factors—quantitative and qualitative, direct and indirect—in their cost-benefit analyses.[72]

Including *all* essential factors in the cost-benefit analysis permits federal agencies to maximize the net benefits of regulation and ensure that their decisions are based on reasoned analysis. One "virtue" of cost-benefit analysis "is that it tends to overcome people's tendency to focus on parts of problems, by requiring them to look globally at the consequences of apparently isolated actions."[73]

The morbidity reduction benefits of the HOS regulation (or of more stringent alternatives) may be significant. The Office of Management and Budget ("OMB") has advised agencies that including morbidity benefits in safety- and health-related rulemakings is especially important under certain circumstances:

> (a) some illnesses . . . cause more instances of pain and suffering than they do premature death, (b) some population groups are known to experience elevated rates of morbidity . . . and thus have a strong interest in the morbidity measurement, and (c) some regulatory alternatives may be more effective at preventing morbidity than premature death.[74]

All three of OMB's factors apply in the HOS rulemaking. First, as FMCSA has noted, studies show that CMV truckers experience obesity, diabetes, cardiovascular disease, hypertension, and high cholesterol at rates that far exceed both the national average and the average among adult male

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[71] Exec. Order No. 12,866, *supra* note 16, § 6(3)(C)(i), at 51,741(stating that benefits of regulatory action can include "the enhancement of health and safety, the protection of the natural environment, and the elimination or reduction of discrimination or bias"), Exec. Order No. 13,563, *supra* note 16, § 1(b), at 3821 (affirming cost-benefit principles specified in Executive Order and stating that health and safety are two benefits that should be considered).

[72] *See supra* notes 16-17 and accompanying text.

[73] Cass R. Sunstein, *Cognition and Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1059, 1069-70 (2000).

[74] OFFICE OF MGMT. & BUDGET, EXEC., *supra* note 38, at 12-13.

workers.[75] Second, while these illnesses often cause premature death,[76] they typically impair both quality of life and productivity for lengthy periods of time before doing so.[77]

Perhaps most important, the direct and indirect costs associated with each of these conditions are extremely high. According to the Centers for Disease Control and Prevention, 75 percent of national health care costs in 2009 were due to chronic conditions.[78] Obesity alone accounts for over 9 percent of the nation's *direct* medical costs,[79] and the Agency for Healthcare Research and Quality has consistently found that people with certain chronic conditions account for a disproportionately large portion health care spending.[80] Many chronic conditions develop over significant periods of time,[81] and "there is often a significant time lag between the act of prevention and the realization of a possible health benefit."[82] As a result, morbidity reduction benefits of the HOS regulation may not be directly realized by the trucking industry, which makes it particularly important for FMCSA to include them in its analysis. Some morbidity reduction benefits may be realized as reductions in the growing portion of Medicare spending on chronic illness.[83] In addition to direct medical expenditures, chronic conditions negatively impact driver safety, earnings, and quality of life—FMCSA should include the benefits of averting these costs in its analysis.[84]

Under basic administrative law principles, the difficulty (or impossibility) of establishing a precise dose-response curve between increased sleep and decreased morbidity does not justify assigning it

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[75] FMCSA 2010 RIA, *supra* note 26, at 5-1 & 5-11 to 5-12. *See also* Bradley C. Martin et. al, *The Impact of Overweight and Obesity on the Direct Medical Costs of Drivers*, 51 J. OCCUPATIONAL AND ENVTL. MED. 180, 184 (2009) (finding a 55% obesity rate among truckers and "substantially higher healthcare costs" among truckers who are *either* overweight or obese as compared with those of normal weight, and concluding that truckers are "particularly vulnerable to obesity related complications and appropriate targets for interventions to reduce weight."); Peter T. Katzmarzyk et. al,, *Sitting Time and Mortality from All Causes, Cardiovascular Disease, and Cancer*, 41 MED. & SCI. SPORTS & EXERCISE 998, 1002 (2009) (finding that prolonged periods of sitting is associated with elevated risks of mortality and of cardiovascular disease, *after* controlling for age, sex, smoking status, alcohol consumption *and leisure time physical activity levels*).

[76] CTRS. FOR DISEASE CONTROL AND PREVENTION, *Chronic Disease Prevention and Health Promotion*, http://www.cdc.gov/chronicdisease/overview/index.htm#1 (last visited Feb. 29, 2011) ("Chronic Diseases are the Leading Causes of Death and Disability in the U.S.").

[77] *See, e.g., id.* (stating that approximately 25% of people with *any* chronic condition have one or more limits on their daily activities, and that diabetes is the leading cause of blindness, kidney failure and nontraumatic lower-extremity amputations among adults).

[78] CTRS. FOR DISEASE CONTROL AND PREVENTION, CHRONIC DISEASES: THE POWER TO PREVENT, THE CALL TO CONTROL 2 (2009), *available at* http://www.cdc.gov/chronicdisease/resources/publications/AAG/pdf/chronic.pdf.

[79] Steven Reinberg, *Almost 10 Percent of U.S. Medical Costs Tied to Obesity*, ABCNEWS.COM, (July, 28, 2009), http://abcnews.go.com/Health/Healthday/story?id=8184975&page=1 (reporting that just over 9% of all national medical spending, or $147 billion annually, is due to obesity).

[80] AGENCY FOR HEALTHCARE AND RES. QUALITY, *The High Concentration of U.S. Health Care Expenditures*, 19 RESEARCH IN ACTION 1, 7 (2006) (reporting that patients with diabetes, heart disease, hypertension, asthma and/or mood disorders accounted for 49 percent of national health care costs in 1996).

[81] Michael J. O'Grady & James C. Capretta, P'SHIP TO FIGHT CHRONIC DISEASE, HEALTH-CARE COST PROJECTIONS FOR DIABETES AND OTHER CHRONIC DISEASES: THE CURRENT CONTEXT AND POTENTIAL ENHANCEMENTS 4 (2009), *available at* http://www.fightchronicdisease.org/pdfs/CBO_whitepaperwPFCDback.pdf.

[82] *Id.*

[83] *Id.* at 3, fig. 2 (showing 76.3% of all Medicare spending covered patients with 5 or more chronic conditions in 2005).

[84] FMCSA already recognizes the impact of adverse health outcomes on safety, earnings, and quality of life. *See* FMCSA 2010 RIA, *supra* note 26, at 5-11 to 5-12 (stating that some studies suggest that obesity causes an increased crash risk, in addition to causing premature death and increased healthcare costs); *id.*, at 5-1 ("Another possible impact of long work hours is the foregone earnings that would result if a driver were to develop a medically disqualifying condition."); *id.*, at 5-11 ("Research indicates that the metabolic and endocrine disruptions associated with short sleep time and long work hours are significantly related to obesity. . . . Obesity is in turn associated with higher incidences of diabetes, cardiovascular disease, hypertension and OSA. . . . Each of these medical conditions imposes costs on drivers who suffer from them and affects the quality of their lives.").

a zero value.[85] Doing so excludes an essential—and potentially sizable—benefit from the cost-benefit assessment of the HOS regulation.[86]

FMCSA should quantify the morbidity reduction benefits to the extent possible, incorporating all related cost items (including, but not limited to health care spending, medically disqualifying conditions (lost wages), and diminished quality of life). To the extent that morbidity reduction benefits are unquantifiable, OMB instructs federal agencies that if "non-quantified benefits and costs are likely to be important, you should carry out a 'threshold' analysis to evaluate their significance."[87]

FMCSA could conduct multiple threshold analyses to improve the HOS regulation. Break-even analysis would indicate the minimum level of morbidity reduction benefits that would make Option 4 preferable to Options 1, 2, and 3. Break-even analyses could also be used to assess the cost-effectiveness of individual provisions, and of policy alternatives. To give just a few examples, break-even analyses could be used to assess the level of morbidity reduction benefits at which (i) more stringent or additional break requirements yield a net benefit, (ii) the 34-hour restart provision should be restricted further or abolished, and (iii) the 16-hour driving window provision ceases to yield a net benefit.

Estimates developed by other agencies could provide values for a unit reduction in the incidence of obesity, chronic conditions, and major and costly complications that arise from those conditions. For example, the Department of Health and Human Services and other federal agencies recently relied on a McKinsey Global Institute analysis to estimate that a six percent reduction in BMI for an obese individual produces a health care cost reduction of approximately 5%.[88] Even those health benefits that cannot be quantified should be included in FMCSA's analysis and could have an impact on its policy selection.

In addition, FMCSA should prioritize its effort to collect information on the relationship between driver morbidity rates and driver work patterns. That information would prove particularly useful if and when FMCSA engages in a more fundamental revision to the HOS regulation (see Section IV).

IV. FMCSA Should Consider a More Fundamental Revision to the Rule

The proposed rule offers amendments to the essential structure that has remained in place since 1938. The main focus of the agency's analysis is the decision between a 9-, 10-, and 11-hour

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[85] In *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1200 (9th Cir. 2008), the 9th Circuit found NHTSA's decision to assign a zero value to greenhouse gas emission reductions to be arbitrary and capricious. The court explained that: "while the record shows that there is a range of values, the value of carbon emissions reduction is certainly not zero." *Id.* OMB instructs agencies "[w]hen benefit and cost estimates are uncertain…you should report benefit and cost estimates (including benefits of risk reduction) that reflect the full probability distribution of potential consequences." OFFICE OF MGMT. & BUDGET, EXEC., *supra* note 38, at 18.

[86] FMCSA offers three rationales for its failure to quantify morbidity reduction benefits of the HOS regulation: the lack of a dose-response curve, the agency's inability to predict drivers' exercise patterns, and the fact that it would be "unjustifiably optimistic to attempt to estimate the degree of potential weight loss" because most people have trouble losing weight. FMCSA 2010 RIA, *supra* note 26, at 5-11. These rationales are insufficient at best, in light of the studies FMCSA has reviewed that demonstrate (i) a strong link between long work hours and obesity, (ii) a strong link between obesity and multiple costly chronic conditions, and (iii) a link between sedentary work and obesity *irrespective* of recreational exercise level. *See, e.g., id.* at 5-11 to 5-12 (citing studies).

[87] OFFICE OF MGMT. & BUDGET, EXEC, *supra* note 38, at 2.

[88] Interim Final Rules for Group Health Plans and Health Insurance Issuers Relating to Coverage of Preventive Services Under the Patient Protection and Affordable Care Act, 75 Fed. Reg. 41726, 41736 (proposed July 19, 2010), *citing* Kenneth E. Thorpe, *The Future Costs of Obesity: National and State Estimates of the Impact of Obesity on Direct Health Care Expenses* (McKinsey Global Institute, Nov, 2009). The agency should also consider recent empirical work on the willingness-to-pay for micro-risk reductions for specific diseases. *See* Trudy Ann Cameron & J.R. DeShazo, *Demand for Health Risk Reductions*, *available at* http://pages.uoregon.edu/cameron/vita/Manuscript_20051269R2.pdf.

maximum driving limit.[89] Given that the 10-hour limit predominated for almost 70 years and that the 11-hour limit has been in place for roughly the last seven, neither represents a significant change to standard industry practices.[90] With the revisions described above to FMCSA's cost-benefit analysis, this tweaking process may be sufficient for the current rulemaking.

However, FMCSA should consider whether developments in the trucking industry, in available technology, or new information about health and safety risks necessitate revisiting the structure of the HOS regulation. For example, FMCSA could consider whether health or safety performance standards should replace (or provide an optional alternative to) parts of the HOS regulation. More generally, FMCSA should assess whether the HOS regulation adequately addresses the market distortions that justify regulating in the first place.

V. FMCSA Should Take Further Steps to Increase Compliance

FMCSA should be especially concerned with ensuring compliance with the HOS regulation, given widespread evidence of non-compliance.[91] The agency's assumption of 100 percent compliance in conducting its cost-benefit analysis[92] is methodologically sound because changes in the compliance rate should have an equal effect on costs and benefits. However, the assumption creates a risk that both the industry and the agency may inadvertently overlook noncompliance or changes in the compliance rate under the new rule. If the rule is viewed as prohibitively expensive, is difficult to follow, or is not clearly communicated to drivers, current compliance rates could drop further.

An important component of ensuring and tracking compliance is better recordkeeping and monitoring of drivers. In 2000, FMCSA proposed requiring electronic onboard recording ("EOBR") devices, in response to a directive by Congress to address a range of issues including the use of "automated and tamper-proof recording devices."[93] The EOBRs would replace the manual driver logbooks and track compliance by recording drivers' start and end times, time spent on-duty and off-duty, and driving distance.[94] FMCSA believed EOBRs would mitigate the falsification of driver logbooks, which it thought to be a significant issue.[95]

After strong objections, the agency did not incorporate the EOBR requirement in its 2003 final rule.[96] FMCSA explained the decision on the grounds that EOBRs were too expensive, difficult to standardize, and unduly intrusive.[97] The 2003 final rule was challenged by a group of public interest groups, led by Public Citizen, on multiple grounds, including FMCSA's failure to require EOBRs.[98] The District Court vacated the rule on different grounds, but it indicated that FMCSA

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[89] It is not totally clear which option FMCSA favors. The agency states: "[o]ption 2 is the Agency's currently preferred option." Hours of Service of Drivers, 75 Fed. Reg. at 82,186. FMCSA also explains that it is "co-proposing options 2 and 3." FMCSA 2010 RIA, *supra* note 26, at 1-5.

[90] Hours of Service of Drivers, 75 Fed. Reg. at 82,173.

[91] *See supra* note 66.

[92] "Compliance with HOS rules was assumed to be 100 percent for both the baseline and options; no attempt was made to estimate real-world compliance rates or to adjust costs and benefits for non-compliance." Hours of Service of Drivers, 75 Fed. Reg. at 82,186.

[93] Interstate Commerce Commission Act of 1995, 49 U.S.C. § 31,136 (2011); Hours of Service of Drivers, 65 Fed. Reg. at 25,563; *Pub. Citizen*, 374 F.3d at 1211.

[94] Hours of Service of Drivers, 65 Fed. Reg. at 25,564; *Pub. Citizen*, 374 F.3d at 1214.

[95] *Pub. Citizen*, 374 F.3d at 1214.

[96] *Id.* at 1215-16.

[97] *Id*. at 1216; Hours of Service of Drivers; Driver Rest and Sleep for Safe Operations, 68 Fed. Reg. at 22,489.

[98] *Pub. Citizen*, 374 F.3d at 1216.

probably violated the Interstate Commerce Commission Termination Act's provision requiring it to "deal with" EOBRs by not fully analyzing the issue in the final rulemaking.[99]

In its 2005 rule, FMCSA again declined to require EOBRs, deciding instead to address EOBRs in a separate rulemaking, because of the complex technical and policy issues involved.[100] FMCSA currently requires EOBRs for carriers deemed to have "excessive" violations but has recently issued a proposed rulemaking that would require EOBRs for a greater number of drivers.[101] By increasing compliance, efforts to require greater use of EOBRs will maximize the potential benefits of the HOS regulation.

Under HOS regulation, FMCSA is also proposing to address noncompliance through stricter penalties for driving beyond the maximum driving limit. Specifically, FMCSA proposes granting itself the discretion to impose the maximum allowable civil penalty for violators who drive more than three hours over the maximum driving limit.[102] FMCSA justifies this proposal on the grounds that it will help ensure compliance and promote the agency's safety and health goals.[103] The agency devoted so little attention to the issue, however, in both the proposed rule and the RIA that it is unclear why it considers a violation of three or more hours to be egregious whereas a violation of anything less is not. Without more explanation the selection of a three-hour "trigger" for maximum penalty eligibility appears entirely arbitrary.

Conversion from driver logbooks to EOBRs and stricter penalties for egregious violations are both critical steps in encouraging compliance. However, they may be insufficient to ensure that the health and safety benefits of the HOS regulation are realized.

VI. FMCSA Should Consider Additional Measures to Ensure Compliance with Safety Practices

In addition to the EOBRs and civil penalties, FMCSA should consider adding non-coercive mechanisms to the HOS regulation to encourage driver compliance and safer practices. There are three ways in which the benefits of the HOS regulation could fail to be realized: (1) drivers fail to comply, (2) drivers comply, but fail to maximize the health and safety benefits of doing so (i.e. they take a break, but don't sleep) and (3) drivers fail to make the health- and safety-maximizing choices permitted, but not mandated, by the HOS regulation. Cognitive error and lack of information could produce any of these behaviors. FMCSA should assess the extent to which drivers systematically underestimate the importance of key safety and health practices like sleep, breaks, and movement, and should evaluate salient policy responses.

Examples of non-coercive mechanisms include education about the highest-value health and safety practices, and the use of heuristics to help drivers remember to engage in those behaviors. FMCSA could consider in-cabin signs that remind drivers to prevent serious health and safety risks by (for example) taking breaks at regular intervals.[104] To correct for information asymmetries, the agency could consider informational signs that explain the specific health and safety risks associated with lengthy work periods in CMVs. More ambitiously, FMCSA could conduct an awareness campaign that highlights the connection between the HOS regulation and the health and safety goals it

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[99] *Pub. Citizen*, 374 F.3d at 1220-22.

[100] Hours of Service of Drivers, 70 Fed. Reg. at 50,041.

[101] Electronic On-Board Recorders and Hours of Service Supporting Documents, 76 Fed. Reg. 5,537, 5,541, 5,544 (proposed Feb. 1, 2011)(to be codified at 49 C.F.R. pts. 385, 390, 395). Under the NPRM, all drivers would be required to use EOBRs except those that currently use timecards. *Id.* at 5544.

[102] Hours of Service of Drivers, 75 Fed. Reg. at 82,183.

[103] *Id.*

[104] OSHA often requires warning signs in regulations protecting workers from health and safety hazards. *See, e.g.* Electrical Standard, 72 Fed. Reg. 7136, (Feb. 14, 2007) (requiring warning signs be posted).

promotes. Additionally, the agency could distribute literature or start an ad campaign to inform drivers about emerging information on the health and safety risks associated with inadequate sleep and sedentary lifestyles.

The agency could also consider in-cabin prompts or alarms that remind drivers to break at certain intervals, or to take a walk, rather than remaining in the truck during all of their breaks. Recent studies have found that automated, audible reminders to buckle one's seatbelt or engage in physical activity can induce safer and healthier behaviors.[105] Especially given FMCSA's proposal to require most CMV drivers to use EOBR technology to ensure compliance, the agency should strongly consider technologies that would induce safer and healthier driver behaviors.

To the extent that non-coercive mechanisms increase compliance and safety and health-promoting practices, they increase the net benefits realized from HOS regulation. At a minimum, FMCSA should evaluate the possibility of incorporating non-coercive mechanisms into the HOS regulation.

Conclusion

To formulate the final HOS regulation, FMCSA should focus on the externalities that necessitate and justify agency intervention. The Agency can do this in two ways. First, it should conduct a complete cost-benefit assessment, which explicitly analyzes individual provisions of the HOS regulation, and compares them to reasonable policy alternatives. FMCSA should incorporate all salient factors in its cost-benefit analysis and should specifically examine the impact of its proposed rule on health risks related to DE exposure. In addition, FMCSA should quantify morbidity reduction benefits to the extent possible, and should use threshold analysis to assess the potential impact of morbidity reduction benefits on the relative value of different policy options. FMCSA should take into account— quantitatively where possible and qualitatively where not—the full range of benefits even where the agency has *already* identified that a particular provision is net-beneficial. Looking ahead, the agency should revisit the basic structure of the HOS regulation and determine whether it remains best suited to modern industry practices, and health and safety goals. Finally, in addition to the implementation of EOBRs and civil penalties, the agency should pursue non-punitive measures for ensuring full compliance with the HOS regulation.

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[105] *See* NAT'L TRAFFIC SAFETY ADMIN. EFFECTIVENESS AND ACCEPTANCE OF ENHANCED SEAT BELT REMINDER SYSTEMS: CHARACTERISTICS OF OPTIMAL SYSTEMS 1, 54 (2009) (finding "there was good agreement on the association of a greater likelihood of seat belt use with ESBR systems in general and the importance of including an auditory component to the system"); Abby C. King et al. *Ongoing physical activity advice by humans versus computers: the Community Health Advice by Telephone (CHAT) trial*, 26 JOURNAL HEALTH PSYCHOLOGY 718, 725 (Nov. 2007) (concluding "The results of this study provide the first systematic evidence that automated, telephone-based computer systems can lead to improvements in physical activity levels over an extended time period.").