Department of Transportation
Pipeline and Hazardous Materials Safety Administration

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Hazardous Materials: Enhanced	)	
Tank Car Standards and	)	*Via regulations.gov*
Operational Controls for High-	)	*September 30, 2014*
Hazard Flammable Trains	)	
	)	

CONSERVATION GROUP COMMENTS ON PROPOSED RULE ON ENHANCED TANK CAR STANDARDS AND OPERATIONAL CONTROLS FOR HIGH-HAZARD FLAMMABLE TRAINS

Submitted on behalf of Earthjustice, Forest Ethics, Sierra Club, NRDC, and Oil Change International

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CONSERVATION GROUP COMMENTS ON PROPOSED RULE ON ENHANCED TANK CAR STANDARDS AND OPERATIONAL CONTROLS FOR HIGH-HAZARD FLAMMABLE TRAINS (SEPTEMBER 30, 2014)

I. INTRODUCTION

On July 23, 2014, the Secretary issued a proposed rule, entitled Hazardous Materials: Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains ("HHFTs"). 79 Fed. Reg. 45,016 (Aug. 1, 2014). In the proposed rule, the Secretary reiterates that: "The growing reliance on trains to transport large volumes of flammable liquids poses a significant risk to life, property, and the environment." *Id*. at 45,016; *accord id*. at 45,067 ("PHMSA's analysis of this combination of factors suggests an increase in the risk of rail related accidents and an increase in the likelihood of a catastrophic event."). Based on the projected continued growth in crude-by-rail and associated train accidents, the proposed rule concludes that the potential for future severe train accidents involving crude oil has increased substantially and poses risks of higher-consequence train accidents. *Id*. at 45,019; *accord id*. at 45,059 ("PHMSA believes that reliance on HHFTs to transport millions of gallons of flammable materials is a risk that must be addressed."). Specifically, PHMSA finds:

> Based on these train accidents, the projected continued growth of domestic crude oil production, and the growing number of train accidents involving crude oil, PHMSA concludes that the potential for a train accident involving crude oil has increased, which has raised the likelihood of a catastrophic train accident that would cause substantial damage to life, property, and the environment.

79 Fed. Reg. 45,066. To reduce the number and severity of crude-by-rail and other rail disasters, PHMSA has proposed what it calls a "comprehensive" package of upgraded safety standards and operational controls.[1]

Earthjustice, Sierra Club, ForestEthics, Natural Resources Defense Council and Oil Change International submit these comments on the proposed rule addressing the various components of the rule. At the outset, we want to highlight a few over-arching points pertaining to the extremely unsafe tank cars currently being used to ship explosive crude oil and ethanol.

This rulemaking comes on the heels of the worst train disaster on the American continent – the July 2013 Lac Mégantic disaster in which a crude-by-rail train derailed, caused an explosion and fire which killed 47 people and destroyed the downtown. It also comes in the wake of a record-breaking year –2013 – in which more oil spilled than in 1975-2012 combined. The Department of Transportation ("DOT") has a statutory duty to minimize the risks to people and the environment from shipping hazardous cargo on trains. It has fallen short of this duty in that it failed to anticipate the current crisis and has been too slow

[1] These comments cite to numerous investigations, reports, presentations, and analysis that are in the public domain and are known to and before the Department of Transportation, PSHMA, and the Federal Railroad Administration. We will provide a CD with many of these materials for inclusion in the docket for this rulemaking. We ask that PHMSA add to the docket the full record of the NTSB Rail Safety Forum, the reports and analyses cited in PHMSA and FRA's analysis underlying this rulemaking, and records of information provide by industry representative that PHMSA's relies upon or considered in the rulemaking.

to take the strong actions needed, particularly with respect to the unsafe tank cars. This rulemaking affords DOT an opportunity to correct its past failures and discharge its legal and moral responsibilities.

An essential step is for DOT to adopt strong tank car standards applicable to all tank cars and all trains that ship explosive crude oil and ethanol. In the proposed rule, DOT floats three options for new tank car standards, one embraced by shippers, one by the railroads, and one developed by DOT. The only credible option is the strongest set of tank car standards developed by DOT with some possible safety improvements, as recommended below. In fact, Canada is well on its way to adopting the strongest of these three options. DOT should do so as well and should not seriously entertain lobbying to back away from all of the safety features that are so sorely needed.

A second essential step is to bring all of the tank cars in the entire crude and ethanol fleets into compliance with the new tank car standards. The National Transportation Safety Board ("NTSB") has been on record for years insisting that all of the tank cars in the fleet must be upgraded. Particularly, when hazardous crude or ethanol is shipped in unit trains with 100 or more tank cars, it only takes 1-2 tank cars to trigger an explosion and put the rest of the tank cars and hazardous cargo, not to mention nearby communities, in peril. The proposed rule would appropriately require retrofitting of most tank cars in order for them to continue to use to ship crude and ethanol.

The proposed rule, however, is seriously flawed in three respects. First, it would allow unsafe tank cars to continue to be used to ship crude oil and ethanol as long as fewer than 20 tank cars are loaded with flammable liquids. The DOT-111 tank cars are far too dangerous to continue to be used to ship explosive crude and ethanol. Indeed, the NTSB first called for an immediate ban on shipping crude oil and ethanol in DOT-111 tank cars when it found in its investigation of the Cherry Valley disaster that "[c]learly, the heads and shells of DOT-111 tank cars ... can almost always be expected to breach in derailments that involve pileups or multiple car-to-car impacts." NTSB, Derailment of CN Freight Train: Cherry Valley, Illinois, June 19, 2009, at 75-76 (adopted Feb. 14, 2012) ("NTSB Cherry Valley Report"). The newer tank cars built since 2011 are also too prone to breach and spill oil to remain in the crude and ethanol fleets into the indefinite future.

Second, the proposed rule would allow the DOT-111 and other unsafe tank cars to be shifted to tar sands service. The rule is thin on analysis to support this shift. However, on its face, it would be indefensible to allow unsafe tank cars to be used to ship tar sands bitumen diluted with chemicals that contain volatile components. Accidents involving diluted bitumen are notorious for being impossible to clean up.

Third, DOT proposes an inexcusably long time frame for phasing out DOT-111 and other unsafe tank cars from trains, with 20 or more cars loaded with hazardous liquids. The phase-out would not even begin for three years and would drag out over three more after that. All ethanol and even a substantial amount of Bakken crude could still be shipped in DOT-111 and other unsafe tank cars until October 1, 2018. DOT estimates that 15 rail accidents would happen every year during the phase-out and an additional 1-2 rail disasters could unfold.

In places, DOT acknowledges the safety imperative to rid the rails of DOT-111s as soon as possible. Its proposal, however, prioritizes doubling the crude-by-rail fleet over public safety. DOT would allow some 61,000 new tank cars to be added to the crude-by-rail fleet, rather than require that the newer tank cars replace the oldest and most hazardous cars in the fleet first. The comments below recite the numbers of

unsafe tank cars and industry projections of how many newer tank cars have been built, are on order, and could be built each year, as well as the number of retrofits that could be done each year. The capacity is there to remove DOT-111 tank cars from the crude-by-rail fleet immediately and replace that capacity with newer tank cars. The capacity is also there to retrofit or replace other unsafe tank cars with tank cars that comply with the new regulatory standards. The excessively long phase-out and failure to ban DOT-111s immediately is not constrained by feasibility.

DOT has the ability to do what is right for public safety and ban the DOT 111s immediately. It also has the ability to make it a priority to replace DOT-111 and other unsafe tank cars with safer ones as the new cars are built. And it could require that the retrofits start immediately, rather than waiting until 2016 to even start the retrofits.

The over-arching need is to protect people from catastrophic crude-by-rail accidents and this should be done before growing the crude-by-rail fleet to double its current size. It is imperative that DOT rise to this challenge because communities that live along the rails have limited ability to protect themselves from the shipment of explosive Bakken crude on rail lines in DOT-111 and other unsafe tank cars in the face of federal preemption and the railroads' common carrier obligations. The oil industry, which makes the choice to ship hazardous crude in unsafe tank cars, reaps most of the profits from transporting crude oil by rail, and faces little liability for the disasters that can unfold. DOT has the statutory and moral responsibility to step in and protect communities from rail disasters and to counter the private sector incentives to grow the crude-by-rail fleet despite the safety risks.

II. IT IS IMPERATIVE THAT DOT MAKE SAFETY THE PARAMOUNT DRIVER OF THE RULES.

A. The Final Rule Must Minimize the Risks to Life, Health and the Environment.

The proposed rule invokes the Hazardous Materials Transportation Act ("HMTA") as the authority for the rulemaking. HMTA directs the Secretary of Transportation to "prescribe regulations for the safe transportation, including security, of hazardous materials in intrastate, interstate, and foreign commerce" and provides that "[t]he regulations . . . shall govern safety aspects, including security, of the transportation of hazardous materials as the Secretary considers appropriate." 49 U.S.C. § 5103(b) & § 5103(b)(1)(B). The Secretary has delegated his authority to administer HMTA to the Pipeline and Hazardous Materials Safety Administration ("PHMSA"). 49 C.F.R. § 1.97(b).

"PHMSA's mission is to protect people and the environment from the risks of hazardous materials transportation." RIA at 12. As the proposed rule explains, "PHMSA is responsible for overseeing a hazardous materials safety program that minimizes the risks to life and property inherent in transportation in commerce" and "the consequences of an incident should one occur." 79 Fed. Reg. at 45,022-23. In keeping with the responsibility to minimize risks, PHMSA has established a hazardous material regulatory system" that is "a risk-management system" and "prevention-oriented." 79 Fed. Reg. at 45,023. Minimizing risks is the over-riding imperative of HMTA and the driving force behind PHMSA's hazardous material regulations, which are the focal point of this rulemaking.

The proposed rule identifies HMTA, 49 U.S.C. § 5103(b), as the statutory authority for the rulemaking. Historically, PHMSA has promulgated regulations governing rail cars that carry hazardous materials under both HMTA and the Federal Railroad Safety Act ("FRSA"), which authorizes the Secretary "as necessary" to issue regulations and orders "for every area of railroad safety supplementing laws and regulations in effect" when the FRSA became effective in 1970. FRSA, 49 U.S.C. § 20103(a); *see, e.g.*, 74 Fed. Reg. 1770, 1789 (2009). PHMSA has coordinated with the Federal Railroad Administration ("FRA"), which administers the FRSA, in developing the proposed rule. 79 Fed. Reg. at 45,016; *see* 49 C.F.R. § 1.89 (delegation of FRSA authority to FRA). PHMSA should invoke the FRSA as additional authority for the rulemaking as it provides a safety net and extends to all areas of railroad safety, even those also covered by another statute, like HMTA. 49 C.F.R. Pt. 209, App. A at 7-9.

In order to meet its statutory obligation to promote safety on the rails and to minimize risks to the public from the shipment of hazardous materials, PHMSA should be explicit throughout the rulemaking about the safety risks at issue and the need to minimize them. In the Rail Safety Improvement Act of 2008, Congress explicitly made safety "the highest priority" and stated "the clear intent, encouragement, and dedication of Congress to the furtherance of the highest degree of safety in railroad transportation." Public Law No. 110-432, § 103(c), 122 Stat. 4851 (2008); *see also id*. § 102(a) (directing DOT and FRA to develop strategies to reduce the number, rates and severity of rail accidents).[2]

Despite these statutory mandates, the proposed rule elevates the balancing of costs and benefits over prevention and the minimization of safety risks. For example, the proposed rule indicates that PHMSA will "seek to ensure we select the car that will have the greatest net social benefits, with benefits primarily generated from the mitigation of the accident severity." 79 Fed. Reg. at 45,052. PHMSA relies heavily on cost-benefit analysis, citing Executive Order 12,866. *Id*. at 45,063. However, an Executive Order cannot over-ride statutory direction to regulate to ensure rail safety and the safe transport of hazardous materials. While costs might be a basis for selecting one alternative over another where both would fulfill the agency's safety mandate, costs cannot supplant statutory direction. [3]

In adopting comprehensive rules in response to the recent spate of crude-by-rail and ethanol disasters, PHMSA must do more than respond to the latest accident. It must adopt rules that will guard against future catastrophes. In the past, PHMSA or its predecessor have been criticized for being reactive to the last rail disaster and adopting only piecemeal regulatory measures that have soon proven inadequate to prevent the next type of disasters.

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[2] FRA has missed the 2012 deadline for finalizing a rule governing the railroad's risk reduction plans that were required by the 2008 Rail Safety Improvement Act. General Accountability Office, *Rail Safety: Improved Human Capital Planning Could Address Emerging Safety Oversight Challenges* at 17 (Dec. 2013).

[3] The draft Regulatory Impact Analysis for this rule ("RIA") and the papers prepared by FRA to calculate the effectiveness of various tank car designs and brake systems provide useful information in assessing alternatives. Indeed, an FRA PowerPoint clarifies that its methods for calculating effectiveness provide a basis for comparing relative benefits of various mitigation strategies using the potential for breaches and amount of oil spilled among tank car options as metrics. FRA cautions, however, that these methods do not predict the incidence of oil spills, the amount of oil that would be spilled, or the consequences of a rail accident. FRA, Overview of FRA Research: Operational Enhancements for Tank Car Safety at 3 (presented at NTSB Safety Forum, April 2014).

In 1994, the National Research Council ("NRC") issued a report concluding that DOT had been reactive in addressing demonstrated tank car defects and had adopted measures to advance safety, by, for example, establishing head and thermal protection requirements only after tank cars punctured and ruptured in accidents and then slowly and only for the types of hazardous materials spilled in those accidents. National Research Council, Ensuring Railroad Tank Car Safety at 10, 12 (1994). The NRC urged DOT to establish safety criteria and assess which hazards have the greatest potential to harm people and the environment and therefore are unacceptable, rather than play catch up after disasters occur. *Id*. at 13-14.

The NRC study came a few years after a National Transportation Safety Board ("NTSB") review of 45 railroad accidents, some with fires and damaging explosions, that occurred during the 1980s. NTSB found that the DOT-111 tank cars breached and spilled their contents at more than twice the rate of other tank cars with additional safety features. NTSB Safety Recommendation R-91-19 (July 1, 1991) (http://www.ntsb.gov/doclib/recletters/1991/R91_19.pdf). Based on investigations of particular train accidents and the safety study, NTSB recommended that DOT modify tank car regulations to eliminate unacceptable risks of hazards from hazardous material spills and explosions. *Id.* at 3-5.[4] At the time of the 1991 recommendation, DOT had initiated a rulemaking to upgrade tank car standards for transporting some hazardous materials. NTSB indicated that more stringent safeguards are necessary for a broader class of hazardous materials than those addressed in that rulemaking, and PHMSA's predecessor agency concurred. NTSB expressed concern that, "in the interim, many hazardous materials that pose severe threats to public safety will continue to be transported in tank cars with inadequate protection." *Id.* at 4. To address these threats, NTSB stated:

> because of the substantial amount of time that will be required to fulfill the intent of Safety Recommendation R-89-80, the Safety Board believes that immediate action is needed to identify the most harmful materials (those that pose the greatest consequences) and to have these materials transported in stronger tank cars that are protected by head shields and thermal jackets.

Id. at 5. DOT adopted new tank car standards, including requirements for tank-head, thermal, and bottom discontinuity protection, but NTSB complained that the heightened standards only covered poisonous-by-inhalation hazards and were inapplicable to flammable gas and other materials posing extreme hazards. 60 Fed. Reg. 49,048, 49.050 (Sept. 21, 1995).

Another series of accidents in 2002-2005 led to NTSB investigations and recommendation to improve the safety and structural integrity of tank cars in accidents. RIA at 1, 18-19. In 2005, Congress converted key NTSB recommendations into a requirement to assess crashworthiness of tank cars in accidents and

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[4] In 1991, NTSB reiterated an earlier recommendation (R-89-80) resulting from an accident investigation:

> Evaluate present safety standards for tank cars transporting hazardous materials by using safety analysis methods to identify the unacceptable levels of risk and the degree of risk from the release of a hazardous material, then modify existing regulations to achieve an acceptable level of safety for each product/tank car combination.

It stressed that: "The need for evaluating present safety standards for tank cars that transport hazardous materials is so important that the Safety Board has placed Safety Recommendation R-89-80 to the DOT on its "Most Wanted" list of safety improvements."

develop new tank car standards. 49 U.S.C. § 20155. In 2009, DOT again adopted strengthened interim design standards for newly manufactured tank cars carrying hazardous materials posing poison inhalation hazards. 74 Fed. Reg. 1770 (Jan. 13, 2009). The rule improved top fittings performance, required normalized steel, increased the gross weight of tank cars meeting the enhanced standards, and adopted a 50 m.p.h. speed limit for loaded rail cars carrying poison-by-inhalation hazard materials in urban areas. Interestingly, the final rule adopted these interim standards as a first stage of a longer-term strategy to enhance safety of tank cars upon adoption of a crashworthiness standard, as compelled by the Congress in 2005. 49 U.S.C. § 20155.

These past rulemakings did not anticipate the surge in crude-by-rail and ethanol unit trains and therefore did nothing to prevent the rail disasters that have since unfolded. PHMSA should take a more precautionary approach in this rulemaking. Such an approach would, for example, remove all unsafe tank cars from shipping dangerous materials rather than enable their transfer to other hazardous shipping, like tar sands.

B. Common Carrier Obligations, Preemption and Market Failures Create a Perfect Storm That Makes It Imperative that DOT Adopt Strong Safety Regulations.

Several factors combine to create a perfect storm in which neither the railroads nor states or communities have the power to protect themselves against the hazards posed by the surge in crude-by-rail with volatile crude being shipped in unsafe tank cars. Only DOT can step in by adopting strong rail safety regulations to protect the country against rail catastrophes like those we have experienced in the last two years. First, as common carriers, railroads must accept reasonable requests to ship goods where the shipment complies with the law. 49 U.S.C. § 11101(a); *see Chicago, Rock Island & Pacific Ry. Co. v. Hardwick Farmers' Elevator Co*., 226 U.S. 426 (1913). The courts have held that this obligation extends to the shipment of hazardous materials where a federal agency has promulgated comprehensive safety regulations for the particular type of cargo. *See Riffin v. Surface Transp. Bd*., 733 F.3d 340, 345-48 (D.C. Cir. 2013) (Surface Transportation Board appropriately determined common carrier obligation extended to toxic by inhalation materials because the conformance of the shipment with comprehensive hazardous materials regulations transformed the shipping request into a presumptively reasonably one); *Akron, Canton & Youngstown RR Co. v. Interstate Commerce Comm'n*, 611 F.2d 1162, 1166-70 (6th Cir. 1979) (affirming determination that railroad had to carry irradiated fuel and radioactive waste in light of its long history of doing so and the national need for rail shipment of nuclear materials). Because current DOT regulations allow the shipment of Bakken crude and other hazardous fuels in DOT-111 and other unsafe tank cars, the railroads have little choice but to accept trains with DOT-111 tank cars, the hazards notwithstanding. It is presumably for this reason that BNSF and Association of American Railroads ("AAR") have themselves advocated for new tank car standards that will significantly improve safety. Notes from Administrator's Meeting with BNSF for Docket PHMSA-2012-0082, at 2 (Mar. 19, 2014); Comments of AAR, Docket PHMSA-2012-0082, at 3-7 (Nov. 14, 2013). It will take action by DOT in the form of new federal tank car regulations or an emergency order over-riding the existing regulations to give the railroads a green light to refuse shipments of Bakken crude or other similarly volatile materials in DOT-111 tank cars.

Second, both HMTA and FRSA have preemption provisions that likely preclude states and local governments from regulating many aspects of rail transportation of hazardous materials. The FRSA

provides that "[l]aws, regulations and orders related to railroad safety . . . and railroad security shall be nationally uniform to the extent practicable." 49 U.S.C. § 20106. State or local governments may adopt more stringent laws only where such law is necessary to eliminate a local safety hazard, is not incompatible with a federal law or regulation, and will not unreasonably burden interstate commerce. *Id*. The HMTA expressly preempts non-federal requirements that relate to five specified subject matters, which include the design and reconditioning of packaging and containers qualified for use in transporting hazardous materials. *Id*. § 5125(b)(1). Accordingly, despite widespread public demands for greater rail safety, state and local governments likely have fewer tools to protect their residents from the imminent hazard posed by DOT-111 tank cars on the rails filled with explosive cargo. *See, e.g.*, California Interagency Rail Safety Working Group, Oil By Rail Safety in California (June 2014) (available at http://www.caloes.ca.gov/HazardousMaterials/Pages/Oil-By-Rail.aspx); Washington Residents Rail Against Crude Oil Shipments, Huffington Post, June 18, 2014 (available at http://www.huffingtonpost.com/2014/06/18/washington-crude-oil-shipments_n_5507798.html); Governor Cuomo Orders Review of Crude Oil Rail Safety in New York State (Press Release Jan. 29, 2014) (available at http://www.governor.ny.gov/press/01292014-crude-oil-rail-safety).

Third, in its determination of need for the new tank car standards, DOT described the "market failure" created by the fact that "the shippers and rail companies are not insured against the full liability consequences of incidents involving hazardous materials." RIA at 17. While Class I railroads may self-insure for $25-50 million, smaller regional and short line railroads may have far less coverage, and the maximum coverage on the commercial rail insurance market is around $1 billion. *Id*. PHMSA elaborated:

> One example of this issue is the incident that occurred at Lac Mégantic, Quebec, in July of 2013. The rail carrier responsible for the incident was covered for a maximum of $25 million in insurance liability and had to declare bankruptcy because that coverage and the companies remaining capital combined were insufficient to pay for more than a fraction of the harm that was caused. This is one example where rail carriers and shippers may not bear the entire cost of "making whole" those affected when an incident involving crude and ethanol shipment by rail occurs." RIA at 17.

Local governments and local emergency responders will be the first called to respond to rail accidents with state governments called into assist. They may well lack the resources and capacities to deal with an accident of the magnitude of Lac Mégantic, and it would strain public coffers to try to make the people and community facing such a disaster whole.

Fourth, it is the shippers that control whether DOT-111 and other unsafe tank cars will be used to ship hazardous materials. Yet the shippers generally do not bear liability for rail accidents once a rail carrier accepts a shipment. RIA at 17. As a result, the shippers lack the incentives created by financial liability to stop shipping explosive cargo in DOT-111 tank cars. *Id.*

PHMSA bears the burden of filling the void left by common carrier obligations and federal preemption. PHMSA must take strong taking regulatory action to correct the market failures it has identified now that we are seeing explosive Bakken crude on mile-long unit trains traveling through communities who are unable to protect themselves.

III. THE PROPOSED RULE UNDER-ESTIMATES THE INCIDENCE AND SEVERITY OF RAIL ACCIDENTS WITHOUT THE RULE AND IN THE EARLY YEARS UNDER THE PROPOSED RULE'S EXCESSIVELY LONG PHASE-OUT OF NONCOMPLIANT TANK CARS.

In this rulemaking, PHMSA is placing great, we believe excessive, weight on the costs and benefits of each aspect of the rule. The proposed rule suggests that PHMSA will select the components of the final rule based on whether the costs of compliance are outweighed by a reduction in the number and severity of crude-by-rail and ethanol accidents. 79 Fed. Reg. at 45,063. As stated above, we believe PHMSA's over-riding statutory obligation is protect public safety and a cost-benefit analysis should not supersede that mandate.

To the extent PHMSA is predisposed to rely so heavily on the costs and benefits of the proposed rule, it is imperative that PHMSA be meticulous in discarding flawed data, precautionary in making assumptions about accident risks and effects, and candid about the limits and gaps in data to support its accountings. In many critical respects, PHMSA has used unreliable data, made unsupported assumptions, and put caution to the side in calculating the incidence and severity of crude-by-rail and ethanol accidents and disasters.

Before turning to the incidence of rail accidents and their damage, the RIA is structured overall in two respects that understate the benefits of the rule. First, the RIA uses a 20-year time horizon for its cost-benefit analysis. However, it assumes that tank cars will have a 40-50 year life. RIA at 78. The primary costs of the rule consist of the costs of building new tank cars and of retrofitting noncompliant ones. These costs will be incurred in the rule's early years and therefore are reflected in full in the cost-benefit analysis in today's dollars or close to them. The benefits take the form of avoided accidents or less severe consequences from the accidents that will occur. The RIA stops accounting for these benefits at the 20-year mark, even though it assumes the new tank cars will be in service for another 20-30 years and many of the retrofitted cars will likewise have continued years of service after 20 years. PHMSA should make sure its costs and benefits are compared over comparable time frames. If the full costs of building and retrofitting tank cars are included, the full life span of the tank cars should be incorporated into the analysis. *See* Office of Management and Budget, Regulatory Impact Analysis: A Primer at 5 (it is appropriate to use the life of capital as the time horizon for the analysis). Alternatively, if PHMSA wants to limit its analysis to a 20-year period, it should amortize the costs of building and retrofitting tank cars over their full life span.

Second, the RIA purports to use a 7% discount rate, RIA at 6 n.8, 191-92, while also presenting costs and benefits at a 3% discount rate in places. RIA at 137-44, 161-68, 176. Nowhere does the RIA explain why it chose to use the 7% over the 3% discount rate. Nor is it explicit about why it uses only a 7% discount rate for the tank car costs and benefits, while it provides figures based on both 3% and 7% for other parts of the proposed rule. The choice of discount rate can have an enormous effect. For example, the RIA estimates that the benefits of the sampling and testing program would be over $800,000 with a 3% discount rate and nearly $400,000 with a 7% discount rate. *See also* RIA at 165 ($3.20 million using 7% and $6.86 million using 3% for certain brake system benefits). OMB Circular A-4, at 19 (2003) explains that a 7% discount rate is only appropriate for the use of capital in the private sector. OMB further

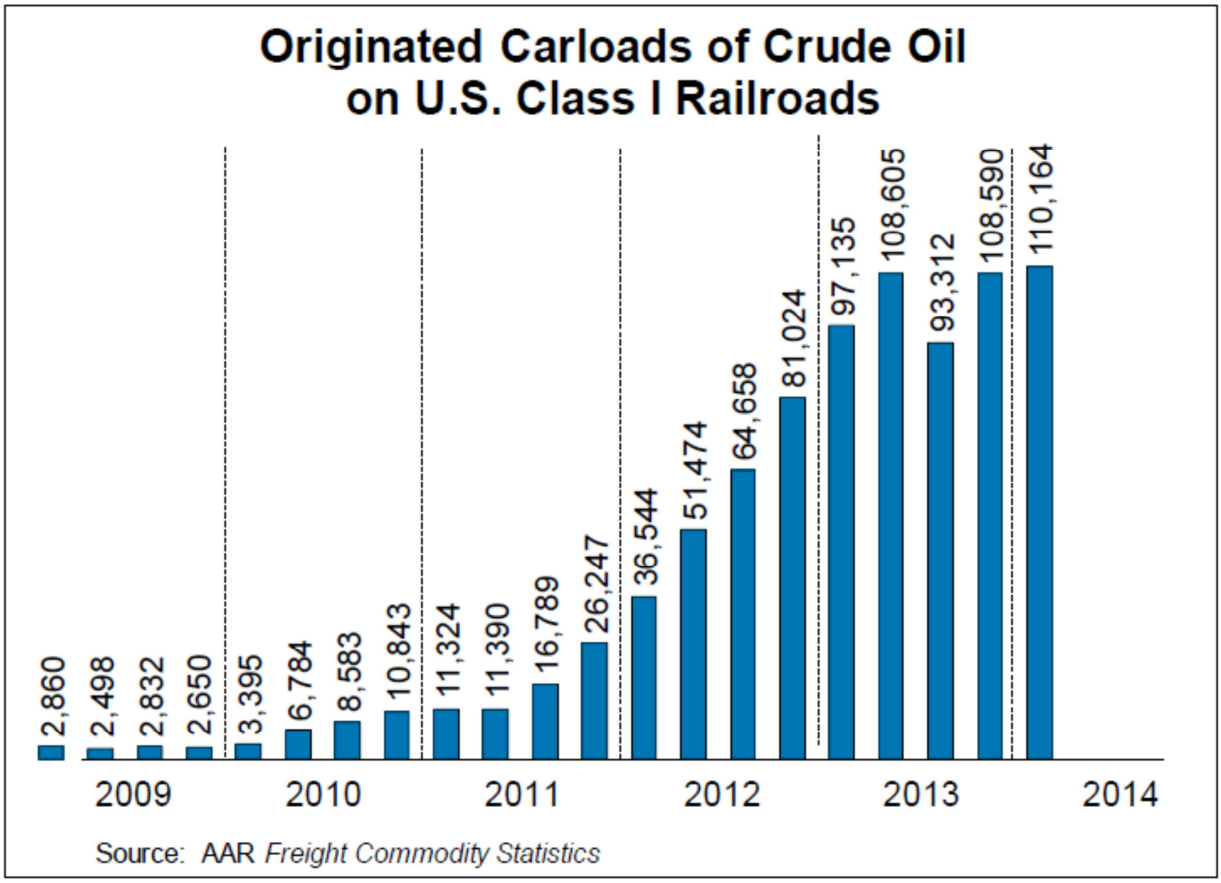
counseled that it may be inappropriate to use a discount rate for future health benefits, such as lives saved. *Id*. Given the market failures and skewed incentives acknowledged by PHMSA in the RIA (at 17), and the safety mandates for this rule in the face of extreme yet hard-to-quantify risks, we urge PHMSA to use a 3% discount rate or not discount rate to assess the benefits from the rule.

A. PHMSA Under-Estimates the Incidence of Rail Accidents and Oil Spills Without and Under the Early Years of the Rule.

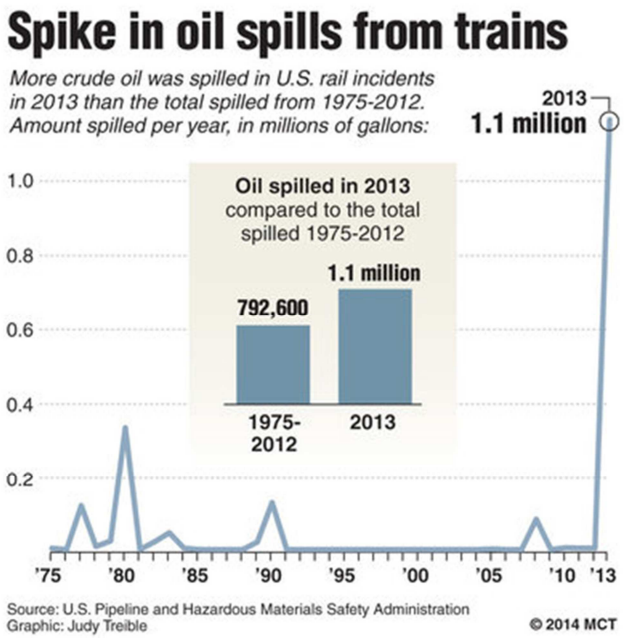
The draft Regulatory Impact Analysis ("RIA") candidly acknowledges the weaknesses and flaws in the available data on rail accidents and oil spills. RIA at 21-27, 29-30. The FRA tracks derailments on an annual basis per million rail carloads, but it does not break down the data by commodity. *Id*. at 20. Accordingly, "[d]ue to limitations in the reported data, it is impossible to isolate the derailment rate of only crude oil and ethanol trains." RIA at 21. This dataset therefore understates the accident rate for crude-by-rail trains in light of the declining accident rate on the rails overall at the same time crude oil and ethanol accidents have been on the upswing. The analysis is also limited because "it is based on carload data which does not account for distance travelled per train." *Id*. PHMSA incident reports are filed only when hazardous material is released. They are a poor indicator of derailment risks, and operators are known to under-report releases or not report them at all. *Id*. at 22, 26-27. PHMSA appropriately did not rely solely on either dataset due to these pitfalls which make them a poor indicator of crude-by-rail and ethanol derailments and oil spills.

Moreover, PHMSA consulted with experts who cautioned that mainline derailment trends would under-estimate crude and ethanol trains' future derailment rates, and that higher volumes of goods shipped (which is the case with crude today) often mean more traffic on the rail lines between maintenance and higher car utilization rates, both of which increase the number of derailments. *Id*. at 22. Based on these expert opinions, PHMSA used the growing volumes of crude and ethanol being shipped by rail to estimate future derailment rates, but it did so against the backdrop of the derailments that occurred across all commodities and from 1995-2012 before the crude and ethanol surges. *Id*. at 23-24.

This approach may well under-estimate the risks of crude and ethanol rail accidents. First, it is far from clear that derailment rates will remain the same as the volumes of crude and ethanol shipped in unit trains grows. Unit trains create operational control issues that could increase the rate of derailments. The past couple years have demonstrated, as DOT found In issuing an Emergency Order in May 2014 (DOT-OST-2014-0067), that there is a "demonstrated propensity for rail accidents involving trains transporting crude oil: and "the risk of rail incidents increases along with the increase in the volume of crude oil shipped. Emergency Order at 4, 5. As if to prove this point, a record amount of oil spilled in 2013 as the amount of Bakken crude shipped by rail reached new heights. The first chart below illustrates the surge in crude-by-rail shipments, which vividly shows that derailment data from 2012 and earlier is likely to under-estimate derailment risks that correlate with volumes shipped.
https://www.aar.org/keyissues/Documents/Background-Papers/Crude%20oil%20by%20rail.pdf.



The second chart immediately below proves the point by depicting the amount of oil spilled in 2013, which exceeds that spilled from 1975-2012 combined. PHMSA must account for the surge in crude-by-rail and the corresponding increase in the incidence of derailments in its derailment rates.



Second, in the RIA narrative, PHMSA notes that unique features of unit trains likewise increase derailment risks because the longer trains are more challenging to control, less stable, and more prone to derailments in emergency braking. RIA at 24; *see also* Calculating Effectiveness of Tank Car Options at 2 ("DOT is concerned that the historical accident data may not account for all unique risks posed by these trains," referring to crude oil and ethanol HHFTs). Despite this recognition that crude and ethanol trains are more prone to derailment, PHMSA drew from the past 18 years of derailment data for all commodities in its derailment estimates.[5]

Third, PHMSA omitted accident data from 2014 in its calculation of derailment risks. 2013 broke all records for the amount of oil spilled in train accidents with six crude-by-rail accidents in the U.S. When the proposed rule was released in July 2014, six crude and ethanol accidents had already occurred in 2014. RIA at 25 & Appendix B. Excluding derailments that occurred in 2014 skews the derailment risk projections downward. It also likely leads to an under-estimation of the amount of oil spilled per derailment, which is the metric used by PHMSA to estimate damages from an accident. *See* RIA at 25-26.

For a similar reason, using derailment data for crude oil and ethanol accidents from 2006-2013 likely under-estimates the amount of oil that may spill in future accidents. RIA at 25. The ethanol surge began in the mid-2000s and has since stabilized, and therefore, it may be captured in the 2006-2013 derailment data. The crude-by-rail surge, however, is growing each year. The Congressional Research Service projected an increase to 650,000 carloads in 2014, up from less than 10,000 in 2008 and 400,000 in 2013. Congressional Research Service, *U.S. Rail Transportation of Crude Oil: Background and Issues for Congress,* at 1 (Dec. 2013). And the RIA projects continued growth that will more than double the number of tank cars in crude oil service. RIA at 79. In fact, there were no crude-by-rail accidents in 2010, underscoring that using crude-by-rail accident data from before 2011 has little value in predicting today's risks. 79 Fed. Reg. at 45,019; RIA Appendix B.

Third, PHMSA excluded Canadian derailments in predicting derailment rates. In addition to Lac Mégantic, in 2013 and 2014 alone, Canada experienced accidents in Jansen, Saskatchewan (24,000 gallons crude spilled); in Calgary, Alberta (train carrying diluent for tar sands derailed on a bridge over a river); in Gainford, Alberta (crude train derailment caused an explosion, fire, evacuation of 100); and in Plaster Rock, New Brunswick (crude train derailed caused massive fire and 150 evacuations). Edmonton Journal, "Significant Crude by Rail Accidents in North America: 2013-2014," found at http://www.edmontonjournal.com/news/train-derailments/index.html, last visited Sept. 7, 2014. Initially, PHMSA included Canadian accidents in its list of major crude oil and ethanol accidents from 2006-2014. Indeed, the proposed rule sent to the White House Office of Information and Regulatory Affairs ("OIRA") for review listed three Canadian accidents that occurred in Plaster Rock, New Brunswick, Gainford Alberta, and Lac Mégantic, Quebec. Proposed Rule Sent to OIRA at 10-11. Crude-by-rail and ethanol train trends and risks do not stop at the border. Volatile crude and ethanol are being shipped in

[5]PHMSA excluded rail yard derailments on the assumption the rule would do little to mitigate derailments in rail yards. RIA at 21. No further explanation for this exclusion is provided in the face of the increase in the shipment of crude to refineries and loading terminals that bring crude unit trains off the main line and into rail yards.

unsafe DOT 111 rail cars throughout North America. While the datasets may not readily lend themselves to a transboundary assessment, excluding Canadian accidents leaves a gap.

B. PHMSA Under-Estimates the Damage From Rail Accidents and the Number of High-Consequence Events.

PHMSA derived a $300 per gallon cost estimate from the Lynchburg derailment. RIA at 30. It explains that it has confidence in the reliability of the cost estimates for Lynchburg and Lac Mégantic, and that it used Lac Mégantic as the prototype only for high-consequence events and Lynchburg as the prototype for the 15 other accidents it predicted would occur annually in the early years under the rule. Using the Lynchburg accident to derive the per gallon accident cost likely under-estimates the harm. First, the NTSB investigation has not yet been completed for that accident, and the clean-up is still underway. The full extent of the potential and actual harm is likely to increase as both the investigation and clean-up progress. Second, it has been reported that the Lynchburg derailment involved primarily CPC-1232 tank cars, which are less prone to puncture and spilling oil than DOT-111s.[6] An accident involving DOT-111 tank cars, given their fragility, would almost certainly spill more oil and cause greater harm and therefore result in a higher per gallon cost. Third, while the Lynchburg accident caused serious contamination of the James River, it would have been far worse had a derailed tank car landed on the town side of the tracks during a busy lunchtime instead of in the river. RIA at 38.

This stroke of luck illustrates how what PHMSA might characterize as an ordinary derailment can turn into a catastrophe. As the RIA discusses, several recent derailments and accidents could have turned into disasters if the circumstances had been slightly different. For example, if the 2009 Cherry Valley, Illinois ethanol accident had occurred in Chicago, more lives would have been lost. RIA at 38. Or, if the Arcadia, Ohio derailment had hit the nearby fertilizer plant, a catastrophic explosion could have killed many workers and bystanders. *Id*. A train that punched a 35-foot hole in the wall of an industrial facility in Vandergrift, Pennsylvania, almost certainly would have exploded and killed many of the 65 people working at the facility had it been carrying Bakken instead of heavy crude. *Id*. The RIA also raises the specter of a derailment on a bridge upstream of a reservoir that supplies drinking water to many communities or one large city. *Id.*

While it is impossible to predict precisely how the next disaster will unfold, it is likely that more Casseltons, Lynchburgs and Lac Mégantics will happen with some causing event more severe harm depending on who or what is in harm's way. We commend PHMSA for accounting for serious high consequence events, but urge PHMSA to increase the number of such events that may occur, particularly in the early years under the rule before its requirements are phased in and the unsafe tank cars are phased out.

PHMSA purported to increase the damage estimates from Lac Mégantic to reflect a more severe accident scenario. However, it did so by adjusting the low end of the Lac Mégantic damages based on average population densities along crude-by-rail and ethanol lines. RIA at 40-41. That average was only slightly above the population densities in Lac Mégantic, a small town. This singular focus on population densities

[6] Jan Mouawadmay, *Despite Orders, Federal Tank-Car Safety Measures Are Slow in Coming*, New York Times, May 8, 2014, available at http://www.nytimes.com/2014/05/09/business/despite-orders-federal-tank-car-safety-measures-are-slow-in-coming.html?_r=0.

likely under-estimates both the number of high-consequence events and their magnitude. First, PHMSA looked at population densities only within ½ kilometer on either side of the tracks. However, DOT has directed emergency responders to evacuate ½ mile on either side of the tracks in an explosion or fire. It would make sense to consider population densities in a comparable radius. Second, population densities may not capture large concentrations of people in downtown areas or industrial facilities where people work but don't reside. Third, sensitive environments and drinking water supplies are often in unpopulated areas. In estimating the number of high-consequence events on a scale comparable to Lac Mégantic or the worst case disaster postulated in the RIA, PHMSA must consider not only population density, but also these other areas along tracks frequented by crude-by-rail and ethanol trains.

C. PHMSA Under-Estimates Damage From High-Consequence Events.

PHMSA assumes that 10 high-consequence events could occur over the next 20 years in the absence of the rule and it draws from Lac Mégantic to monetize the harm from each catastrophic event. RIA at 37. The RIA estimates the damage from Lac Mégantic at a dollar value of $1.2 billion, even though it acknowledges that "estimates of the total cost to clean up, remediate, and rebuild the town have risen to as high as $2.7 billion because the costs have risen above the initial $1 billion estimate and much of the clean up and rebuilding is ongoing." RIA at 37. PHMSA further cautions that the $1.2 billion estimate for Lac Mégantic might under-estimate the harm from future high-consequence events:

> PHMSA considers $1.2 billion in damages to be a somewhat conservative measure of the damages that could be caused by a higher consequence event. For example, the event at Lac Mégantic Quebec produced damages close to half a billion dollars in terms of loss of life. Cleanup costs associated with the event, which had initially been estimated at $200 million, are now being estimated at twice that amount. It is still unclear when the lake and river that drain from the lake will be completely cleaned up, and the nearly the entire downtown has yet to begin reconstruction a year later. The value of lost business activity, temporary unemployment of those working at the businesses destroyed, etc. may be much more than the initial estimates on which the $1.2 billion figure are based suggest.

RIA at 39.

Despite these concerns, the RIA ignores the $2.7 billion estimate and uses $1.2 billion as the starting point for estimating the costs of high-consequence events. It assumed that over 20 years without the rule, nine high-consequence events might result in $1.2 billion in loss of life and harm and that one even more catastrophic event might result in $6 billion in damages. RIA at 41-42. It then discounted these estimates based on the assumption that enhanced CPC-1232 will comprise a growing percentage of the fleet and produce less harm in accidents. RIA at 42-43. The fleet assumption ignores the fact that DOT-111 and CPC-1232 tank cars could, under the proposed rule, continue to be used to ship crude oil and ethanol in blocks of 19 or fewer tank cars and for tar sands service.

Not only does the RIA select the low end of the range of costs from Lac Mégantic, but it also expressed the benefits as a range and expressed its view that fewer than 10 high-consequence events would be likely to occur over the next 20 years under the proposed rule. RIA at 37. While it is difficult to predict how many such catastrophe will occur given that large-scale crude-by-rail shipments in unit trains is a relatively new phenomenon, PHMSA must be careful not to downplay the costs and the incidence of such events. We urge that PHMSA ensure that its cost estimates represent a true high end of the range for

high-consequence events. For starters, that would mean the RIA would not use $1.2 billion as the cost figure for Lac Mégantic in the face of the growing costs of the clean up. It would also mean that the RIA should identify a worst case discharge in keeping with PHMSA's responsibilities to ensure the capacity to clean-up and prevent a substantial threat of a worst-case discharge, 33 U.S.C. § 1321(j)(5)(C)(iii), as PHMSA recognizes in the Advance Notice of Proposed Rulemaking concerning oil spill response planning released on the same day as the proposed tank car rule. It would also mean that PHMSA should account for natural resource damages, *i.e.*, the cost estimate for an oil spill must include not only the costs of removing the oil, but also the costs of restoration, replacement or rehabilitation of the damaged natural resources. 33 U.S.C. § 1321(f)(4). Yet the RIA is silent as to natural resource damages, even though it acknowledges the persisting contamination of the lake and river impacted by Lac Mégantic, RIA at 37, 39, and the even greater environmental harm and clean-up costs that may be caused by a spill of heavier crude. RIA at 28.

In terms of quantifying the losses, the proposed rule appropriately accounts for the lives lost. RIA at 32. In the past, the human toll had been undercounted by looking to successful civil litigation for damages as a proxy. Of course, every life is precious and represents a huge loss even if the survivors do not sue for damages and obtain a judgment that fully accounts for the loss. The RIA discusses various harms in addition to loss of life, such as injuries, rebuilding destroyed areas, lost business activity, temporary unemployment of those employed at the businesses destroyed, clean-up costs, and the value of the lost product (*e.g.*, the crude oil). RIA at 32, 39. The RIA is vague in terms of what other harm it included in its damage estimates. It is unclear whether the damage figures include the full impact of evacuation in terms of lost work and business, being unable to get to a hospital for care and emotional impacts of being evacuated due to a violent and horrific explosion and fire. The RIA also does not appear to account for latent illnesses caused in whole or in part by the emissions from oil explosions or exposure to contaminated soils and water. It also does not account for the emotional harm from living through a disaster or post-traumatic stress disorder that may plague people who witness or suffer harm from train accidents. Nor does it quantify the decline in property values due to the damage from an explosion or the fear of such a catastrophe.

D. PHMSA Erroneously Assumes No Tank Cars Will Be Retired Before They Reach the End of their Useful Lives.

PHMSA assumes that virtually the entire crude and ethanol fleets have been built since 2000. RIA at 78; 79 Fed. Reg. 45,059. A Rail Energy Transportation Advisory Committee, Rail Fleet Update as of March 6, 2014, represents that the general purpose tank car fleet is on average 16 years old, with over 20% of the fleet more than 25 years old, that approximately 2/3 of the tank cars ordered since 2011 have been for crude and petroleum service, and that tank car builds will be equally driven by new and replacement demand in 2014. Rail Energy Transportation Advisory Committee, Rail Fleet Update at 7, 10 (March 6, 2014). It is unclear whether PHMSA's assumption about the age of the crude and ethanol fleets is in accord with these data.

PHMSA also assumes that DOT-111 and CPC-1232 tank cars have a 40-50 year life span. RIA at 77. However, there is evidence in the record that undercuts this assumption. The Greenbrier Company states that AAR and DOT permit a 50-year life span but "generally cars have a lifespan of approximately 30 years." Greenbrier Meeting Notes at 2. Moreover, PHMSA's assumption fails to account for the wear

and tear on the cars from the huge mileage being accrued, and for damage to the integrity of the tank car from the corrosive elements in Bakken crude. 79 Fed. Reg. at 45,024, 45,044, 45,066, 45,067. Yet the RIA states: "Unprocessed crude oil may present unique hazards such as corrosivity, sulfur content and dissolved gas content, thereby affecting the integrity of the tank car." RIA at 8.

In addition, PHMSA assumes that no noncompliant tank cars will need to be retired. RIA at 79. This assumption is based on the assumed 40-50 life span, the newness of the fleet, and the plan to repurpose 23,237 tank cars for tar sands service. *Id*. This assumption is invalid if a substantial portion of the fleet (or any given the breadth of the assumption) was built earlier than PHMSA has assumed and/or the life expectancy of the DOT-111 and CPC-1232 tank cars is shorter than PHMSA has assumed. It is not surprising that a Railway Safety Institute presentation to NTSB stated that "[s]ome tank cars will be retired or repurposed." RSI, NTSB Rail Safety Forum, Transportation of Crude & Ethanol at 4 (April 2014).

PHMSA has recognized the necessity for it to regulate to prevent disasters in the face of market failures that prevent private actors from doing so on their own. Railroads have limited ability to refuse crude-by-rail trains, and the oil shippers have little incentive to temper their profit-making ambitions for the sake of safety on the rails when they generally escape liability for accidents. RIA at 17. Insurance coverage is insufficient to cover the full scope of the harm in high-consequence disasters, leaving affected communities and often governments stuck footing the bill for the clean-up. *Id.* And for the accident victims, contaminated waters, and irreplaceable environments that cannot be made whole even if the railroads had the funds, prevention is their only hope. PHMSA bears a heavy burden of accounting fully for the number of disasters and their consequences given the weight it is placing on that accounting in this rulemaking.

IV. PHMSA NEEDS TO CONDUCT AN ENVIRONMENTAL JUSTICE ASSESSMENT OF THE RULE'S IMPACTS

The proposed rule references several regulatory reviews that apply to the proposed rule, but fails to assess the disproportionate impacts of rail accidents and the fear of such accidents on communities of color and low-income communities. Under Executive Order 12,898, 59 Fed. Reg. 7629 (Feb. 11, 1994), federal agencies like PHMSA must ensure that their programs and actions do not have disproportionate impacts on low-income populations or communities of color. Specifically, PHMSA and other executive agencies must, to the maximum extent practicable, "identify[] and address[] . . . disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." *Id*. at § 1-101. In furtherance of this mandate, PHMSA is required to "collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income" and "use this information to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations . . . ." *Id*. at § 3-302(a).

Analyses performed by ForestEthics using information drawn from US census block data, show that approximately 25.8 million Americans live within the 1-mile evacuation boundary of primary crude by rail routes in the United States--the "blast zone." Of these 25.8 million, 15.7 million (60.8%) potentially qualify as living in environmental justice communities under one or more of three factors:

1. INCOME: Median Household Income for the Block Group is 65% of Median Household Income for the State

2. RACE: 25% or more of the Block Group population is non-white

3. LANGUAGE ISOLATED: 25% or more of the Block Group households have no primary English speaker over 14 years old.

Of the 15.7 million, 12.8 million census block residents (or 49.6% of blast zone residents) meet the race parameter as one of the criteria. By contrast, the US population as a whole is 22.3% nonwhite (http://quickfacts.census.gov/qfd/states/00000.html). This analysis reveals that hazardous crude-by-rail unit trains and this rulemaking may have disproportionate impacts on people of color and low-income communities residing in the blast zone.

The Environmental Justice Executive Order requires that PHMSA address the disproportionate impacts of the harm posed by crude-by-rail and ethanol unit trains on people of color and low-income populations. Contrary to these obligations, neither the proposed rule nor any other materials in the rulemaking docket assess the extent to which people of color and low-income populations disproportionately reside in the blast zone. OMB Circular A-4, at 8, likewise directs federal agencies to include in the regulatory impact analyses how costs and benefits are distributed by income and race. In light of the evidence described above, PHMSA must conduct an environmental justice assessment of the tank car standards, the slow phase-out and the operational controls developed in this rulemaking.

V. PHMSA SHOULD ADOPT THE PHMSA TANK CAR OPTION.

A train derailment can turn into a disaster when crude oil or ethanol are shipped in unsafe tank cars. This was so tragically demonstrated in Lac Mégantic, Quebec in July 2013, when an unattended train carrying 72 DOT-111 tank cars filled with Bakken crude oil derailed, breached, and spilled an estimated 1.6 million gallons of crude. The spilled oil ignited and triggered an explosion that killed 47 people, including young children, leveled a four-block radius in the downtown area, and led to the evacuation of over 2,000 residents. Transportation Safety Board of Canada, Railway Investigation Report R13D0054: Lac Mégantic, Quebec, 06 July 2013, at Summary & 3, 133 (Aug. 2014) ("Lac Mégantic Investigation"). Crude-by-rail accidents in the United States have likewise caused oil spills, contamination of wetlands, explosions, and evacuations, including a November 2013 derailment near Aliceville, Alabama, that triggered explosions, an extensive fire, and a 630,000-gallon oil spill that severely contaminated wetlands along the tracks, and a December 2013 accident near Casselton, North Dakota, that spilled 400,000 gallons of crude oil, ignited a giant fireball, and required the evacuation of 2,300 residents. A recent NTSB presentation documented 16 significant accidents between 2006 and the spring of 2014, with dozens of fatalities and 2.8 million gallons of crude oil spilled. *See* NTSB Senior Hazardous Materials Accident Investigator, Rail Accidents Involving Crude Oil and Ethanol Releases, at 3-5 (Apr. 22-23, 2014). To put the crisis into perspective, in 2013, more crude oil spilled from trains in the United States

(more than 1.1 million gallons) than the total amount that spilled from 1975-2012.[7] More than 4,000 people were evacuated from their homes due to crude-by-rail train explosions in 2013, dwarfing the total number evacuated due to pipeline and rail accidents from 2002-2012.
Long before Lac Mégantic, NTSB recommended that no crude oil or ethanol be shipped in DOT-111 tank cars because they "can almost always be expected to breach in derailments that involve pileups or multiple car-to-car impacts." NTSB, Derailment of CN Freight Train: Cherry Valley, Illinois, June 19, 2009, at 75-76 (adopted Feb. 14, 2012) ("NTSB Cherry Valley Report"). On impact, the shell of the DOT-111 tank car has a propensity to puncture and the valves on the top and bottom of the car tend to shear off or rip open. In comments on the advance notice of proposed rulemaking, NTSB reiterated that "recent railroad accidents have shown that using DOT-111 tank cars to ship flammable liquids creates an unacceptable public risk" and urged "PHMSA to take immediate action to require a safer package for transporting flammable hazardous materials by rail." NTSB Comments on PHSMA 2013-0082 at 1-3 (Dec. 5, 2013) (emphasis added).

Each of the three tank car design options in the proposed rule options would dramatically improve crashworthiness in rail accidents compared to the DOT-111, with the survivability of the car increasing as additional safety features are added. 79 Fed. Reg. at 45,053. Overall, the various options for new tank car standards would reduce accident severity compared to the unjacketed DOT-111 tank cars by 40-51% depending on the option. *Id.* at 45,060; RIA at 32.

It is now universally recognized that the CPC-1232 tank car standards adopted by the industry by consensus for new tank cars ordered after October 1, 2011 are also deficient. The CPC-1232 tank cars have thicker, more puncture-resistant shells, protective (half-height) head shields at both ends of the tank car, a reclosing pressure relief device, and additional protections for the top fittings. The petition filed by the Association of American Railroads ("AAR") in 2011 sought incorporation of the CPC-1232 standard into DOT regulations. *See* AAR Petition 1577 to PHMSA at 5-7 (Mar. 9, 2011). Industry estimates of the increase in crashworthiness of the CPC-1232 tank cars compared to the DOT-111s range from 50-75%. *See, e.g.*, Notes from BNSF Meeting (Mar. 19, 2014); AAR Comments on PHMSA ANPR at 4 (Nov. 14, 2013).

As CPC-1232 tank cars have joined the crude-by-rail fleet, however, they have demonstrated serious flaws rendering them unsafe in accidents. For example, in January 2014, CPC-1232 tank cars breached and spilled 90,000 gallons of crude oil in an accident in New Augusta, Mississippi, and the tank car that punctured and spilled its crude oil into the James River in Lynchburg, Virginia, in April 2014 was a CPC-1232 tank car. Calculating Effectiveness Rates of Tank Car Options at 4 & n.6.[8]

PHMSA and the industry over time have appropriately recognized the need for enhanced safety features beyond the industry consensus standard from 2011. Indeed, BNSF told PHMSA and FRA in a meeting on this rulemaking that they never would have supported the 2011 consensus standards if they had known about crude-by-rail and they now believe a jacket is essential. Notes of BNSF Meeting at 2 (Mar. 19,

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[7] Curtis Tate, *More Oil Spilled From Trains in 2013 than in Previous 4 Decades, Federal Data Show,* McClatchy DC, Jan. 20, 2014 (*available at* http://www.mcclatchydc.com/2014/01/20/215143/more-oil-spilled-from-trains-in.html).
[8] Jan Mouawadmay, *Despite Orders, Federal Tank-Car Safety Measures Are Slow in Coming,* New York Times, May 8, 2014, available at http://www.nytimes.com/2014/05/09/business/despite-orders-federal-tank-car-safety-measures-are-slow-in-coming.html?_r=0.

2014). Recently, rail car manufacturers have committed to construct new tank cars for crude and ethanol to meet the "enhanced CPC-1232 tank car" standards, which are presented as Option 3 in the proposed rule. RIA at 75, 77. As explained in the proposed rule, the enhanced jacketed CPC-1232 tank car would modify the CPC-1232 standard by requiring a jacket, thermal protection, full-height head shields, and improvements to the bottom outlet handle and pressure relief valve. 79 Fed. Reg. at 45,019, 45,052. These features would improve the ability of the tank car to withstand a collision substantially over the DOT-111 tank cars. 79 Fed. Reg. at 45,052-53. All of these safety features are necessary, as demonstrated by the FRA's calculations of the effectiveness of tank cars to withstand collisions. Calculating Effectiveness Rates of Tank Car Options at 1 (enhanced CPC-1232 car is 41.3% more effective than an unjacketed DOT-111 and thermal protection is needed as tank cars survived the crash on 29 occasions but then spilled oil after exposure to a pool fire caused a thermal tear); *see also* Comparative Analysis of Documented Damage to Tank Cars Containing Denatured Alcohol or Crude Oil Exposed to Pool Fire Conditions: A White Paper by Karl Alexy, FRA. Because the industry has agreed to construct new tank cars to the enhanced CPC-1232 standard, it has become the status quo and is appropriately considered the baseline for this rulemaking. 79 Fed. Reg. at 45,052-53.

The proposed rule presents two other tank car options to address ways in which the enhanced CPC-1232 tank car standards remain insufficient. The AAR 2014 Recommended Car – Option 2 – is based on the 2014 comments submitted by AAR in response to the ANPR. AAR now endorses a thicker shell – 9/16 inch-thick – which would add 1/8 of an inch to the 7/16 inch-thick shells in the enhanced CPC-1232 tank cars. Like the enhanced CPC-1232 car, the other two options would require jackets. For its part, BNSF has ordered 5000 AAR 2014 tank cars. 79 Fed. Reg. at 45,052.

As the proposed rule indicates, "shell puncture is the most common train accident damage that results in loss of lading." *Id.* at 45,053. It is, therefore, a safety imperative not to cut corners on shell thickness. FRA assessed relative puncture resistance and found that jacked tank cars with 9/16 inch-thick shells provide a 68% improvement over DOT-111 tank cars, while a 7/16 inch-shell provides only a 35% improvement. Id. at 45,054. In other words, the extra 1/8 inch nearly doubles the improved protection compared to the DOT-111 tank cars.

It has been reported that the oil shippers support either the enhanced CPC-1232 design or an increase in shell thickness of only 1/16 of an inch from the 2011 CPC-1232 tank cars. [9] FRA estimates that the extra 1/8 inch of shell thickness would reduce crude oil and ethanol accident severity by 10% relative to the enhanced CPC-1232 tank car. *Id.* at 45,052. Simulations show that this increased accident severity means significantly more tank cars with the 1/8-inch thinner shells will puncture in accidents at 30 and 40 m.p.h. than tank cars with the additional shell thickness FRA, Objective Evaluation of Risk Reduction from Tank Car Design & Operations Improvements at 15. In fact, FRA has explored the benefits of increasing shell thickness even further to 5/8 inch shells and found that still fewer tank cars would puncture and spill oil in accidents with 5/8 inch-thick shells. *Id.* Reducing shell thickness from the AAR 2014 and PHMSA tank car options should be rejected as it would needlessly increase safety risks and the severity of crude-by-rail accidents.

[9] *Older Tank Cars to Be Phased Out Under Oil, Rail Industry Offer,* Money News, July 14, 2014, available at http://www.moneynews.com/Economy/Tank-Oil-Rail-Industry/2014/07/14/id/582594/.

PHMSA and FRA have developed their own tank car standards, which the proposed rule calls the PHMSA and FRA Designed Tank Car (or sometimes just the PHMSA Tank Car), which adds top-fitting protections, rollover protections, and electronic pneumatic control ("ECP") braking systems. 79 Fed. Reg. at 45,018. PHMSA estimates that ECP brakes would reduce accident severity by 36% compared to conventional brakes and by 18% when compared to end of train ("EOT") braking devices or distributed power ("DP"). *Id.* at 45,052. As explained in the FRA paper entitled, "Calculating Effectiveness Rates for Emergency Brake Signal Propagation Systems" at 3, a train equipped with ECP brakes that derails at 40 m.p.h. will have fewer punctured tank cars compared to the same train without ECP brakes. "This effectiveness is similar to a speed reduction from 40 to 30 m.p.h." *Id.*

The proposed rule addresses braking systems both in their own right as an operational control and as a component of the PHMSA tank car design. We address the operational control proposal later in these comments and wholeheartedly endorse that proposal, which would either require ECP brakes for tank cars built after October 1, 2015 and for retrofits or require travel at speeds of no greater than 30 m.p.h. In addition to reducing derailment damage, ECP brakes offer significant improvements in preventing accidents in the first place in the form of better stopping distances, train control, less wear on components, and increased safety. FRA, Overview of FRA Research: Operational Enhancements for Tank Car Safety at Slide #13 (Presented at NTSB Rail Safety Forum on April 22, 2014).

We support requiring ECP brakes for unit trains that carry crude oil and ethanol given the role they play in preventing accidents and reducing the number of tank cars that will breach and spill oil in an accident. We understand that industry representatives have raised concerns about the ability to implement ECP brakes immediately. Notes from PHMSA Meeting with Greenbrier and Amsted Rail at 2 (Mar. 4, 2014) (endorsing ECP brakes but over time); R.L. Banks & Associates, Rail Industry Analysis of Tank Car Standards at 5-7 (Sept. 2014) (submitted as comments on the proposed rule). If PHMSA determines that implementation cannot occur immediately, we urge PHMSA to adopt the PHMSA tank car standards and to delay the implementation dates only for the ECP braking systems, but not for the other standards because of the safety imperative. Since tank cars can readily be retrofitted to add ECP braking systems, putting the other tank cars standards into place immediately would be workable and the reduced speed limits would afford some added protection in the interim.

Canada has proposed to adopt the PHMSA tank car standards for both new and retrofitted tank cars. Transport Canada, Explanatory Note to Tank Car Regulatory Changes (July 18, 2014) (available at http://www.tc.gc.ca/eng/tdg/clear-modifications-menu-1193.html.). It has proposed only that one option and has not floated the additional enhanced CPC-1232 or AAR 2014 options. The U.S. should follow Canada's lead and adopt the strongest of the three tank car options in the U.S. proposed rule. While the two countries generally strive to harmonize their standards so that uniform standards apply on both sides of the border, the U.S. should not choose a less protective option and thereby put pressure on Canada to weaken its safety standards in order to have harmonized standards across the continent.

While we support the PHMSA tank car option, we urge PHMSA to strengthen the PHMSA tank car standards from what is presented in the proposed rule in two respects. First, we urge PHMSA to require existing tank cars to have additional top-fittings protections (which the Canadian proposed rule would do), as explained in our discussion of the phase-out and retrofit portions of the proposed rule. Second, we urge PHMSA to take further steps to reduce the risks posed by bottom outlet valves, which have sheared

or ripped off in accidents. In its Cherry Valley investigation, NTSB found damage from inadequate top fittings protection and bottom outlet valves on DOT-111 tank cars in addition to punctured shells and head shields. NTSB specifically found that if the tank cars would have had added protections, the severity of the accident would have been reduced. Cherry Valley Report at 76-81. Where the bottom outlet valves sheared off, the open valve caused the most, if not all, of the oil that was spilled from the car. *Id*. at 80. NTSB recommended that bottom outlet valves on all tank cars – new and existing – be designed to remain closed on impact during accidents. *Id*. at 81. In its Cherry Valley report, NTSB identified elimination of bottom outlet valves as the most effective way to prevent oil spills from bottom outlet valves and noted that shippers of toxic chemicals made such a change voluntarily in the 1990s. *Id.* at 81. The next safest option would be to remove the bottom outlet handles during transportation. This is one of the options that would be included in the PHMSA and AAR 2014 tank car options. 79 Fed. Reg. at 45,056. However, PHMSA would allow another option – requiring that bottom outlets "be designed with protective safety systems to prevent unintended actuation during train accident scenarios." *Id*. at 45,077 (language of proposed rule). This proposed alternative is vague in that it does not prescribe what safety features would be required, nor does it establish a performance standard. PHMSA should consider more protective alternatives (in keeping with its obligations to assess alternatives under the National Environmental Policy Act, NEPA), including eliminating bottom outlet valves, removing the handles during shipment, prescribing other designs and assessing their efficacy, and establishing a performance standard. PHMSA reports that it rejected the first approach – eliminating bottom outlet valves – not because of safety benefits but because of shippers' concerns about impacts on loading and unloading crude oil. 79 Fed. Reg. at 45,056. PHMSA has not explained why it didn't consider requiring removal of handles during shipping. Given DOT's statutory safety mandates, PHMSA must address the relative safety benefits of these options as well as establishing more accountability in the alternative it proposed to allow.

The proposed rule also establishes a performance standard and would authorize the use of tank cars constructed after October 1, 2015 for shipping crude oil and ethanol if they meet either the new tank car design standards or the performance standard. 79 Fed. Reg. at 45,057. The proposed rule endorses the performance standard option as a way to encourage innovation. *Id*. at 45,058. While the undersigned do not object to a performance standard approach in principle, it is critical that the standard truly afford an equivalent level of health and environmental protection. *See id.* at 45,058 (stating an intent to provide an equivalent level of safety). Toward that end, DOT should provide a thorough analysis of the performance metrics that explains how they would afford equivalent protection. In addition, DOT should establish an approval process that clearly places the burden on builders and shippers to prove that alternative designs afford the same or even greater health, safety and environmental protection.

VI. PHMSA SHOULD MAKE THE NEW TANK CAR STANDARDS APPLICABLE TO A SINGLE TANK CAR CARRYING CRUDE OIL, ETHANOL, AND OTHER HAZARDOUS LIQUIDS, RATHER THAN ALLOW UNSAFE TANK CARS TO CONTINUE TO SHIP HAZARDOUS MATERIALS.

The proposed rule would make its tank car standards and operational controls applicable to high-hazard flammable trains ("HHFTs"), which would be defined to include a single train with 20 or more tank cars

loaded with flammable liquids. 79 Fed. Reg. at 45,040. PHMSA proposed to exclude combustible liquids and tar sands from the definition of HHFTs, *id*. at 45,040, 45,059, which is unjustified from a safety perspective, as addressed below. By limiting the rule to HHFTs, PHMSA would allow crude oil and ethanol to continue to be shipped in unsafe tank cars, provided fewer than 20 cars in a single train are loaded with the commodity.

We strongly oppose allowing unsafe tank cars, including any DOT-111s or CPC-1232 tank cars, to continue to be used to ship crude oil and ethanol in any configuration unless retrofitted, including in blocks of fewer than 20 cars. Recent accidents have demonstrated that DOT-111 and even CPC-1232 tank cars are simply too hazardous to remain on the rails loaded with explosive cargo. The NTSB has used incredibly strong language to describe the risks posed by DOT-111s, calling them "unacceptable" because the DOT-111 tank cars "can always be expected to breach in derailments that involve pileups and multiple car-to-car impacts." Cherry Valley Report at 75-76. It would be irresponsible for PHMSA to allow DOT-111s to continue to be used to ship crude oil or ethanol in even a single tank car.

While PHMSA has noted generally that hazards increase when unit trains carry huge volumes of explosive crude oil, it has not conducted an assessment of the risk of derailments or their severity that supports the HHFT cut-off at 20 cars. First, a train that is not an HHFT could have dozens of rail cars, which could pose operational challenges and car-collision risks in a derailment. It is far from clear that trains that do not meet the HHFT definition would have a total of 19 railcars or fewer. Even where that might be the case, accident investigations have shown that derailments tend to start in the front of a train. For all trains, the derailment began in the first four railcars 40% of the time and in the first ten cars 50% of the time, and for freight trains, the derailments began in the first five cars 21% of the time and in the first 25 railcars 50% of the time. FRA, Hazmat Seminar in Reno, NV – Location of First Derailed of Incidents Since 2008 Slide (June 25-27, 2013). In fact, in at least four of the accidents used by PHMSA to assess the impacts of the proposed rule, the point of derailment occurred in the first 19 cars. *Compare* RIA at 19 *with* FRA Hazmat Seminar – Location of First Derailed Slide. And significant damage has occurred to the first 19 cars involved in derailments. FRA, Hazmat Seminar (Damage to Cars Slide).

Second, serious damage has occurred when fewer than 20 cars have derailed and spilled their contents, RIA at 19, 195-206. The most striking example is the Lynchburg, Virginia accident in April 2014, which caused a fire and serious contamination of the James River when a single tank car breached and spilled its contents. The recent accidents show the extreme hazards posed by Bakken crude, which is particularly volatile and tends to explode in accidents. In fact, DOT's "Orange Book" instructs first responders to clear and evacuate a half-mile area surrounding a single rail car in flames. U.S. Department Of Transportation/Transport Canada, Emergency Response Guidebook: A Guidebook For First Responders During The Initial Phase Of A Dangerous Goods/Hazardous Materials Transportation Incident (2012). Given the propensity of DOT-111 tank cars to breach in derailments, it would be irresponsible for PHMSA to allow DOT-111s to continue to be used to ship any hazardous materials in any configuration, including trains of less than 20 cars. And given the risks posed by CPC-1232 tank cars that lack improved safety features, PHMSA should reconsider and prohibit their use to ship crude oil and ethanol in even a single tank car.

The concept of "key trains," from which the HHFT definition is derived, originated in the context of shipping poisonous by inhalation materials. Originally, a key train was defined as a train with five or

more tank carloads of any poisonous by inhalation materials. Recently, however, the key train definition was revised to extend to a train with a single carload of poison or toxic by inhalation materials. 79 Fed. Reg. at 45,031-32. In this proposed rulemaking, PHMSA proposes to impose lower speed limits on HHFTs that have even a single tank car that does not comply with the new tank car standards. 79 Fed. Reg. at 45,047. In making this proposal, PHMSA is recognizing the risks both of accidents and the increased severity of accidents from a single unsafe tank car. Due to the risks, PHMSA should go further and prohibit the use of tank cars that do not meet the new tank car standards for shipping crude oil and ethanol. The risks are too great to allow unsafe tank cars to be used to ship such explosive and environmentally destructive cargo.

VII. PHMSA MUST CLARIFY HOW THE PROPOSED RULE WOULD APPLY TO TAR SANDS SHIPMENTS AND ENSURE THAT TAR SANDS BLENDED WITH VOLATILE DILUENTS ARE COVERED BY THE NEW SAFETY REQUIREMENTS.

The proposed rule states that about 23,000 DOT-111 and CPC-1232 tank cars will be transferred to tar sands service, either directly (jacketed cars) or after retrofitting (unjacketed cars).[10] Similarly, the Draft Regulatory Impact Analysis states that "[t]ar sands has a high flashpoint and is generally classified as a combustible liquid, which means tank cars carrying tar sands will not be covered by this rule."[11] The version of the proposed rule sent to the White House for review did not carve out an exception for tar sands from the phase out of DOT-111 and CPC-1232 tank cars. It appears that the transfer and retrofit of these tank cars for tar sands service emerged during the OIRA review. Perhaps because of this late change, neither the proposed rule nor the RIA explains the basis or impact of the use of these tank cars for tar sands. For example, neither specifies whether the DOT-111 and CPC-1232 tank cars would be used to ship raw bitumen, rail bitumen, diluted bitumen, diluent, or other liquids used in tar sands production or transport. PHMSA should clarify what it means by "tar sands service" and lay out the precise and full array of risks posed by shipping all of these materials. Only then can PHMSA ensure that this transfer of tank cars would not pose unacceptable safety risks.

"Tar sands" can refer to raw bitumen or to bitumen blended with varying levels diluent, also known as diluted bitumen, or "dilbit." While "dilbit" generally refers to formulations that include around 30 percent diluent, the term "railbit" is sometimes used to refer to formulations that include around 15 percent diluent.[12] Most formulations of diluent include natural gas liquid condensate, which contains volatile hydrocarbons such as benzene, toluene, ethyl benzene and xylene.[13] Material safety data sheets—which contain information about the proper use, storage, handling, and emergency procedures for hazardous materials—confirm that diluents are extremely flammable.[14] Diluents are often separated from

[10] 79 Fed. Reg. at 45,060.
[11] RIA at 81.
[12] U.S. Department of State, Draft Supplemental Environmental Impact Statement for Keystone XL Project, March 2013, at 1.4-47.
[13] Diane Bailey and Danielle Droitsch, *Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel*, NRDC Issue Brief, Feb. 2014, at 4, available at www.nrdc.org/energy/files/tar-sands-health-effects-IB.pdf.
[14] Imperial Oil MSDS for dilbit, available at www.ceaa.gc.ca/050/documents_staticpost/cearref_21799/3139/responses_to_j_wier-att4.pdf (stating that dilbit is "[e]xtremely flammable" and "will readily ignite at normal temperatures"); Cenovus Energy, Inc. MSDS for heavy

the bitumen in dilbits at receiving locations and "backhauled" to the original or other destinations using the return tank cars.[15]

PHMSA should clarify that the new tank car and operational standards in the proposed rule will, in fact, apply to dilbit. This appears to be the case; dilbit is a "flammable" liquid and the new standards in the proposed rules apply to trains "carrying 20 or more carloads of a Class 3 flammable liquid."[16] A PHMSA official recently stated that diluted bitumen would qualify as a flammable Class 3 material in Packing Groups II or III under current regulations.[17] Likewise, the diluent that is separated from bitumen at offloading terminals or refineries for "backhauling" is extremely flammable and should not be transported in puncture-prone tank cars. PHMSA should make clear that because dilbit and backhauled diluents pose risks comparable to Bakken crudes and other hazardous liquids, the same safety standards will apply. Furthermore, as explained elsewhere above, PHMSA should apply these new standards to *all* trains carrying any amount of dilbit or diluent, not just trains carrying 20 or more carloads of these materials.

Another reason PHMSA should prohibit transporting dilbit in the puncture-prone DOT-111 and CPC-1232 tank cars is because of the risk of environmentally damaging spills. PHMSA's authority to ensure the safe transport of petroleum is not limited to hazards relating to flammability. The HMTA gives the Secretary of Transportation broad authority to prescribe regulations for the safe transportation of hazardous materials, including petroleum oils. 49 U.S.C. § 5103(b); 49 C.F.R. §§ 105.5, 172.101. And as explained above, PHMSA should invoke the FRSA as additional authority for the rulemaking, as the FRSA extends to all areas of railroad safety. Under both of these statutes, PHMSA has the power to issue regulations designed to protect the public from the risks of crude oil spills.

Such regulation is warranted here. Dilbit is extremely difficult to clean up after a spill, much more so than conventional crudes. Effective clean-up methods simply do not yet exist, and may never exist. After a spill, the diluent in dilbit volatilizes into the air or dissolves into water, leaving the heavy bitumen behind.[18] Because it does not readily biodegrade, the remaining heavy bitumen can become "a continual source of oil."[19] Indeed, PHMSA acknowledges that tar sands "may be particularly damaging to the environment."[20]

There have been two recent spills of dilbit after pipeline ruptures that have highlighted these issues. The 2010 spill into the Kalamazoo River in Michigan led to the most expensive oil pipeline cleanup in U.S.

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crude oil/diluent mix, available at www.cenovus.com/contractor/docs/HeavyCrude-DiluentMix.pdf (stating that dilbit is flammable and "will ignite at normal temperatures"); MEG Energy MSDS for dilbit, available at keystonepipeline-xl.state.gov/documents/organization/205570.pdf (stating that dilbit is a flammable liquid by OSHA and WHMIS criteria and that released vapors "may form flammable/explosive mixtures").

[15] *See, e.g., Southern Pacific Resource Corp. completes arrangements to transport and market bitumen via CN to the U.S. Gulf Coast*, June 27, 2012, www.cn.ca/en/news/2012/06/media_news_transport_market_bitumen_20120627 (stating that "Southern Pacific has the opportunity to backhaul lower priced diluent from the Gulf Coast utilizing its empty return rail cars.").

[16] 79 Fed. Reg. at 45,075.

[17] Elana Schor, *Canadian oil sands crude is the X factor in crude-by-rail rule*, Energy Wire, Aug. 13, 2014, available at www.eenews.net/energywire/stories/1060004416.

[18] U.S. Department of State, Final Supplemental Environmental Impact Statement Keystone XL Project, January 2014, at 3.13-10.

[19] *Id*. at 3.13-3.

[20] RIA at 81, fn. 66.

history, totaling more than $1 billion.[21] And the 2013 spill in Mayflower, Arkansas contaminated an entire neighborhood and caused numerous health problems for residents, including respiratory disorders, nausea, fatigue, nosebleeds, bowel issues, and headaches.[22] Accordingly, PHMSA must ensure that dilbit or any other formulations of tar sands that pose a spill risk be transported in tanks cars that will not easily puncture on impact.

VIII. THE PROPOSED PHASE-OUT, RETROFITTING, AND REPURPOSING OF NONCOMPLIANT TANK CARS.

A. It Is Appropriate to Require Retrofitting, Phase-Out or Repurposing of Noncompliant Tank Cars.

Under the proposed rule, DOT-111 tank cars would no longer be used to ship crude oil (or ethanol) in high-hazard flammable trains after a phase-out period that runs until October 2020. 79 Fed. Reg. at 45,059 ("the DOT Specification 111 tank car would no longer be authorized for use in HHFT."). The proposed rule appropriately determines that the risks are too great to allow continued shipment of flammable materials in DOT-111 tank cars or other tank cars that do not comply with the new tank car standards. While shippers and various industries would prefer a rule that allowed the continued use of legacy tank cars without modification for their entire useful lives, recent accident rates and impacts, coupled with the surge in unit trains carrying flammable crude and ethanol, make it imperative to have a full phase-out of the shipment of hazardous materials in tank cars that do not comply with the new tank car standards. We support PHMSA's proposal for a phase-out of the shipment of hazardous materials in old tank cars that have not been retrofitted to comply with the new tank car standards, although we believe that the phase-out should proceed on a much faster schedule with an immediate ban on shipping crude and ethanol in the DOT-111 tank cars.

The proposed rule contains one exception to the requirement that old tank cars must be retrofitted to meet the new standards in order to remain in hazardous material shipment. Under the proposed rule, existing tank cars would not need to have additional top-fittings protection based on the costs of such retrofits. 79 Fed. Reg. at 45,058, 45,059. The version of the proposed rule sent to the Office of Information and Regulatory Affairs did not have a retrofitting exemption for top-fittings protections. Instead, such an exemption "was specifically suggested by OIRA." Substantive Differences between NPRM Submitted to OIRA on April 30th and Published in the FR on August 1, at 2 (in PHMSA 2012-0082). The proposed rule states, as the basis for the exemption, that the costs for such retrofits would exceed the benefits. 79 Fed. Reg. at 45,059; RIA at 77. However, as laid out below, PHMSA's monetization of the consequences of train accidents and disasters understates the full extent of the risk and damage.

PHMSA should consider the nature of the public health risks from top-fittings breaches and determine whether retrofits should be required at least for certain types of tank cars and hazardous fuels to avoid

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[21] April Van Buren, *Great Lakes racing to prepare for a new kind of oil spill*, WBEZ, Sept. 15, 2014, available at www.wbez.org/news/science/great-lakes-racing-prepare-new-kind-oil-spill-110797.

[22] *Nora Caplan-Bricker, This Is What Happens When a Pipeline Bursts in Your Town: Conflicted about Keystone? Consider the horrific impact of an oil spill in Arkansas, New Republic, Nov. 18, 2013, available at www.newrepublic.com/article/115624/exxon-oil-spill-arkansas-2013-how-pipeline-burst-mayflower.*

such risks. Elsewhere the proposed rule makes the case for requiring top-fittings requirements, stating that 25% of the damage to tank cars in recent train accidents is due to damage to the top fittings and highlighting the domino effect when one car carrying flammable liquids ignites. 79 Fed. Reg. at 45,055. Inadequate top-fitting protections pose heightened risks when a tank car rolls over or falls on its side is not initially breached but then is exposed to fires in nearby cars. PHMSA concludes that "[p]reventing the release of flammable liquids in a derailment, regardless of the volume that is lost from a specific source, reduces risk to public health and the environment." *Id*. Moreover, FRA found that the top-fitting protections in the PHMSA tank car would reduce the damage by half compared to DOT-111s and tank cars lacking these protections would be 1/3 as effective in withstanding collisions as the PHMSA car with such protections. Calculating Effectiveness Rates of Tank Car Options at 6, 10. R.L. Banks and Associates recommend in their comments that existing tank cars be retrofitted to have the same top-fitting protections required for new tank cars. R.L. Banks & Associates Report at 8-9.[23] The record supports reconsidering whether top-fitting protections should be required for existing tank cars.

B. The Phase-Out Period Is Far Too Long.

The proposed rule would establish a three-stage timeline for requiring the phase-out, retrofitting or repurposing of tank cars that do not meet the new tank car standards. As stated above, the phase out is inapplicable to tar sands and to trains that have fewer than 20 cars loaded with other crude oil or ethanol. Neither limitation is in accord with the Department's obligation to ensure rail safety and to protect the public against hazardous shipment disasters.

In terms of what it does cover, the phase-out timeline is far too long given the extreme public safety risks. The phase-out proposed by PHMSA would not begin to kick in until October 2017 and would run until October 2020:

Timeline for Continued Use of DOT Specification 111 Tank Cars in HHFT Service

Packing Group	DOT 111 Not Authorized After
I	October 1, 2017
II	October 1, 2018
III	October 1, 2020

79 Fed. Reg. at 45,043 (Table 15).[24]

[23] The proposed rule notes that rollover protections pertain to dynamic loads and depend upon the thicker 9/16 inch tank shells to be able to withstand the stresses imparted by a rollover protection structure. Together, the rollover protections and thicker shells in the PHMSA car would supply top-fittings protection. 79 Fed. Reg. at 45,056. In other words, the decision not to require top-fittings retrofits depends on adopting the thicker tank shell specifications of the PHMSA car.

[24] When DOT announced the proposed rule, it described the phase-out as beginning in two years. U.S. DOT Announces Comprehensive Proposed Rulemaking for the Safe Transportation of Crude Oil, Flammable Materials (July 23, 2014) (available at http://www.dot.gov/briefing-room/us-dot-announces-comprehensive-proposed-rulemaking-safe-transportation-crude-oil). The press release represented: "Specifically, within two years, it proposes the phase out of the use of older DOT 111 tank cars for the shipment of packing group I flammable liquids, including most Bakken crude oil, unless the tank cars are retrofitted to comply with new tank car design standards." However, the first deadline for phasing out noncompliant tank cars is not until October 1, 2017 for Packing Group I materials, more than 38 months after issuance of the proposed rule.

PHMSA's phase-out proposal should be understood against the backdrop of the actions Transport Canada is taking. Canada has acted more expeditiously to phase out DOT-111 tank cars upon deciding that it had to "move aggressively to address the safety concerns of Canadians" and could not wait for harmonization with U.S. regulatory actions. 2014 TSB Canada Recommendations & TC Responses at 2. First, in April 2014, Transport Canada issued an emergency order "immediately and unilaterally" prohibiting the use of the oldest DOT-111 tank cars for transporting crude oil and ethanol. The prohibition became effective in late May 2014, immediately stopping the use of DOT-111 without bottom sills to ship any dangerous goods. Transport Canada Protective Directive No. 34 (Apr. 23, 2014). Second, in July 2013, Transport Canada adopted the CPC-1232 standards from 2011, and it is moving swiftly to codify the PHMSA car standards. Transport Canada, Explanatory Note to Tank Car Regulatory Changes (July 18, 2014) (available at http://www.tc.gc.ca/eng/tdg/clear-modifications-menu-1193.html.). Even before finalization of the PHMSA car standards, Canada has established a phase-out schedule that would prohibit shipping crude oil or ethanol in DOT-111s as of May 1, 2017. *Id*. From that date on, DOT-111 tank cars would need to be retrofitted to be used to ship crude oil or ethanol. While this schedule allows DOT-111s to remain on the rails for far too long, Canada is moving more quickly to stop the shipment of crude oil and ethanol in DOT-111 tank cars than the U.S. proposal.[25]

In addition, in February 2014, Canada's Class 1 Railways imposed a surcharge for shipments using DOT-111 tank cars, and they made commitments to phase out or retrofit their DOT-111 tank cars, in some instances by the end of 2014. Lac Mégantic Investigation at § 4.1.21, 134-36.[26] These actions taken by the regulators and railroads in Canada, coupled with DOT's failure to act, create incentives for shippers to shift DOT-111s to the U.S. fleet. Indeed, BNSF officials have expressed concern "that the DOT 111s will come to the U.S. and the CPC-1232s will end up in Canada." Notes from Meeting with BNSF for Docket PHMSA-2012-0082 at 2 (Mar. 19, 2014). PHMSA has recognized that the risks are simply too great to leave to market forces, in light of the market failures. RIA at 17. The market, however, is transnational and actions to over-ride market forces in Canada to protect the public from undue hazards will likely exacerbate the hazards on the U.S. side of the border.

C. Growing the Fleet Is Not an Adequate Justification for Keeping DOT-111 Tank Cars in Hazardous Shipping Fleets.

PHMSA has proposed an excessively long phase-out of noncompliant tank cars because it has prioritized expanding the crude fleet over removing tank cars that pose an imminent hazard from the fleet immediately. DOT's paramount mission is to promote railroad safety and reduce risks from shipping hazardous materials. Allowing new tank cars to expand the fleet rather than replace DOT-111 tank cars and unjacketed CPC-1232 tank cars would improperly subjugate safety to considerations outside DOT's statutory mandates and put the public at risk for longer than necessary.

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[25] Canada is moving more slowly with respect to the CPC-1232 tank cars built to the industry's 2011 standards. Transport Canada's schedule for requiring the retrofitting or phase out of CPC-1232 tank cars would not begin until May 1, 2020 and then only for Packing Group I. The deadline for Packing Group II would be May 1, 2022 and for Packing Group III would be of May 1, 2025. Transport Canada, Explanatory Note to Tank Car Regulatory Changes (July 18, 2014). Canada's schedule for phasing out CPC-1232 tank cars for shipping crude and ethanol is also far too long, particularly for unjacketed CPC-1232s, given the risks.

[26] We urge DOT and railroads to design a similar surcharge immediately for shipping crude oil and ethanol in DOT-111 tank cars.

The RIA at 32-33 lays out PHMSA's baseline fleet projections. PHMSA assumes that only enhanced CPC-1232 tank cars will be built for crude oil service going forward. RIA at 32, 77. Under all methods for assessing crashworthiness, the enhanced CPC-1232 tank car is significantly less prone to puncture and spill oil than DOT-111s and unenhanced CPC-1232s. Accordingly, replacing noncompliant tank cars with enhanced CPC-1232s will improve safety and the improvements would be quite substantial if the replaced tank cars are DOT-111s or unjacketed CPC-1232s. The safety benefits will only increase as the replacement cars are built to even higher safety standards, as would be the case for the PHMSA car and even the AAR 2014 car.

Instead of assuming or mandating that newly built tank cars replace the most hazardous tank cars in the fleet, PHMSA assumes that the new tank cars will expand the fleet and the hazardous tank cars will remain in service until 2017-2018. Thus, PHMSA assumes that enhanced jacketed CPC-1232 tank cars will comprise 40% of the fleet by 2019, "even without regulatory intervention, due to the high demand for more cars to ship crude oil." RIA at 32. While thousands of new tank cars will be built each year at least up until 2019, the new tank cars will be added to the fleet, rather than replace DOT-111 and unjacketed CPC-1232 tank cars. *See* RIA 33, 80. The RIA explains:

> Based on industry projections, PHMSA estimates that roughly 61,000 new cars will be needed to meet demand for increased shipment of crude oil by rail. RIA at 79.

Railway Supply Institute represents that it currently has orders for 55,400 tank cars and that it intends to build 37,800 CPC-1232 tank cars by the end of 2015. *Id*. All growth in the fleet, which RSI estimates to be 61,000 cars, is attributable to the crude oil fleet. *Id*. The fleet forecast is presented in Table TC5 on page 80 of the RIA, although the numbers in the table do not coincide precisely with those in the narrative.[27]

The proposed rule also assumes and even encourages the repurposing of noncompliant tank cars for tar sands service. 79 Fed. Reg. at 45,060-61; RIA at 82-83. The safety pitfalls of doing so are addressed elsewhere in these comments. In terms of PHMSA's proposed phase-out design, the timing of the tank car repurposing and retrofitting is instructive of PHMSA's misguided priorities. PHMSA assumes jacketed tank cars will be transferred to tar sands service in 2017 and unjacketed will not be retrofitted in order to be repurposed for tar sands and other service until 2018. RIA at 89. Its proposed rule would require no retrofitting of jacketed DOT-111s and CPC-1232s transferred into tar sands service. RIA at 91. In other words, PHMSA is assuming (or proposing) that most hazardous tank cars will remain on the rails longer in order to minimize or postpone the amount of retrofitting needed to adapt them for the tar

[27] PHMSA has drawn its estimates pertaining to the fleet and the pace at which new tank cars can be built or retrofitted from RSI's April 2014 presentation to the NTSB and figures provided in an OIRA meeting on the draft proposed rule, which were not made available to the public until September 8, 2014. RIA at 77-79. The ethanol figures are attributed to a web link that does not link to relevant material, thereby denying the public the ability to see the data. The Greenbrier Company has provided more ambitious figures for new tank car builds and retrofits, estimating that 35,000-38,000 tank cars could be built in 2014. Notes of Greenbrier-PHMSA Meeting at 2 (June 20, 2014). The Rail Energy Transportation Advisory Committee, Rail Fleet Update at 20 (March 6, 2014), represents that 28,996 new tank cars were delivered in 2013, and delivery is expected of 33,000 in 2014, 29,000 in 2015, 26,000 in 2016 and 22,000 in 2017.

sands service PHMSA is poised to authorize. Newly constructed tank cars – enhanced CPC-1232 tank cars or safer ones – would then replace the jacketed tank cars transferred to tar sands service before replacing the even more hazardous tank cars. *Id*. at 89-90. PHMSA estimates that 20,300 tank cars could be constructed to the new standard in 2015, *id*. at 90, yet it would allow those cars to be used to expand the crude tank car fleet or replace the jacketed cars shifted to tar sands service, rather than replace more hazardous tank cars.

Inexplicably, PHMSA does not call for any retrofitting of old hazardous tank cars to begin until 2016. RIA at 89-90. It assumes the retrofitting will take place in 2016-2018. In all, it estimates 66,185 tank cars will need to be retrofitted and that 1/3 will be retrofitted each of those years. RIA at 89-90. If the retrofitting began immediately, more hazardous tank cars could be removed from crude oil and ethanol service faster.

While PHMSA defends its drawn-out phase-out by stating that it "provides sufficient time for car owners to update the existing fleet," in reality, PHMSA has put expanding the fleet first and safety second. 79 Fed. Reg. at 45,061. The proposed rule highlights that the two-year phase-out for Packing Group I "will not result in a shortage of available tank cars for HHFT." *Id.* The phase-out, however, should be designed to afford the greatest public health and safety protection possible, not simply to lengthen the transition to accommodate a desire to increase crude-by-rail shipments before addressing the extreme safety risks.

The proposed rule estimates that 42,550 tank cars are in the crude oil fleet, and 22,800 unjacketed DOT-111 tank cars are currently in crude oil service, which includes, but is not limited to, the shipment of Bakken crude. 79 Fed. Reg. at 45,025 (29,780 tank cars are in the ethanol fleet). Relying on industry estimates, PHMSA indicated that 33,800 new tank cars can be manufactured each year, 55,400 new tank cars are currently on order, an additional 37,800 CPC-1232 tank cars will be in service by the end of 2015, and over 22,000 tank cars can be retrofitted each year. *Id*. at 45,043; RIA at 77-79, 89-90. These figures demonstrate that the industry has the capacity to replace unjacketed DOT-111s immediately and to replace the other noncompliant tank cars far more expeditiously than proposed.

D. PHMSA Should Adopt a Faster Phase-Out Based on the Risks Posed by the Non-Compliant Tank Cars and Ban DOT-111s Immediately.

It is commensurate with PHMSA's duty to protect the public against hazardous material accidents for PHMSA to develop a risk-based phase-out, as it has indicated it seeks to do. 79 Fed. Reg. at 45,061. Since the packing group classifications tell only a part of the story and could be subject to misapplication, however, a more justifiable risk-based approach would ban use of the riskiest tank cars immediately and then phase-out the use of the other cars over time based on the risks posed by the tank cars and the hazardous materials.

PHMSA has an obligation to consider an alternative that would phase out the use of unjacketed DOT-111s immediately based on the risks. This obligation derives, in part from PHMSA's obligation to consider alternatives as part of its obligations under the National Environmental Policy Act ("NEPA"). PHMSA asserts that its preferred alternative will reduce safety and environmental risks and increase health and environmental resource protections. 79 Fed. Reg. at 45,073. However, PHMSA should consider a phase-out alternative that would reduce the imminent hazards currently posed by unsafe tank

cars and crude rail shipments sooner and to a greater extent than its proposed approach. The obligation to consider an immediate phase-out of the unjacketed DOT-111s also derives from the July 15, 2014 Unsafe Tank Car Petition submitted by the Sierra Club and ForestEthics, which asked the Secretary to adopt an immediate ban on shipping Bakken crude in unjacketed DOT-111 tank cars.

In addition, the NTSB has called for an immediate ban on shipping crude oil and ethanol in DOT-111 tank cars initially when it found in its investigation of the Cherry Valley disaster that "[c]learly, the heads and shells of DOT-111 tank cars ... can almost always be expected to breach in derailments that involve pileups or multiple car-to-car impacts." NTSB Cherry Valley Report at 75-76. After Lac Mégantic, the NTSB reiterated that "recent railroad accidents have shown that using DOT-111 tank cars to ship flammable liquids creates an unacceptable public risk" and called for "the expeditious implementation" of its safety recommendation to ban use of DOT-111s to ship crude or ethanol. NTSB Comments on PHSMA 2013-0082 at 1-3 (Dec. 5, 2013). In Senate testimony, the NTSB Vice Chair (now its Acting Chair) stressed that the DOT-111s "create the unnecessary and demonstrated risk that, in an accident, hazardous materials could be released and, in the case of flammable materials, such as crude oil and ethanol, could ignite and cause catastrophic damage. . . .The NTSB continues to find that accidents involving the rupture of DOT-111 tank cars carrying hazardous materials often have violent and destructive results." Senate Testimony of NTSB Vice Chair Christopher A. Hart, Enhancing Our Rail Safety, Before Subcomm. On Surface Transp. & Merchant Marine Infrastructure, Safety & Security, at 3-4 (Mar. 6, 2014). DOT has an obligation to be responsive to such calls for immediate action from the NTSB.

Moreover, DOT has found that unsafe crude-by-rail conditions pose an imminent hazard that necessitates DOT emergency measures to abate the hazard and that shipping volatile crude in DOT-111 tank cars is a key component of the imminent hazard on the rails. *See, e.g.*, RIA at 32, 35 (40% fewer enhanced CPC-1232 tank cars will spill oil in a derailment compared to unjacketed DOT-111 tank cars); RIA at 73 (tank shells of DOT-111s puncture when struck at 7.4 mph and the heads puncture at 7.6 mph; "these data show that the DOT Specification 111 is significantly more likely to puncture than the proposed alternatives."). DOT should immediately take effective action to reduce those hazards. Waiting four years to do so is unresponsive to the risks.

The NTSB Chair, Deborah Hersman, underscored the urgency of banning the DOT-111s when she urged DOT to use its emergency authority to toughen tank car standards rather run the risk of another disaster before these regulations will be finalized. She complained that "[t]here is a very high risk here that hasn't been addressed. They aren't moving fast enough." Joan Lowy, NTSB Chief Says Obama Administration Needs to Act Immediately on Oil Train Safety, U.S. News & World Report, Apr. 23, 2014. Issuance of an emergency order or expedited phase-out of the DOT-111s is desperately needed. As NTSB Chair Hersman put it: "We don't need a higher body count before they move forward. That is a tombstone mentality. We know the steps that will prevent or mitigate these accidents. What is missing is the will to require people to do so." *Id*.

Various studies have assessed the crashworthiness of other tank cars in the existing fleet. For example, crashworthiness increases as the thickness of the shell increases, and jacketed tank cars fare significantly better than unjacketed versions of the same tank car design. RSI/AAR, NTSB Rail Safety Forum Presentation on Tank Car Accident Safety Research For Crude Oil & Ethanol Cars, at 10 (April 2014) (providing RSI/AAR's adaptation of conditional probability of release figures for jacketed and unjacketed DOT-111 and CPC-1232 cars and AAR's 2014 car, showing declining risks with jacketed CPC-1232s and the AAR 2014 car). After imposing an immediate ban on shipping volatile crude in unjacketed DOT-

111 tank cars, DOT should impose an expeditious phase-out of use of the remaining noncompliant tank cars based on their propensity to breach and spill oil in an accident.

E. The Packing Group Approach Fails to Reduce Extreme Public Risks Fast Enough From Bakken Crude.

PHMSA has proposed a three-stage phase-out by packing group. Under this proposal, the first stage of the phase-out applies only to hazardous materials classified as Packing Group I. All ethanol is classified as Packing Group II, 79 Fed. Reg. at 45,040, and accordingly no ethanol shipments would be subject to retrofitting or phase-out requirements until October 2018, the second stage of the phase-out. Most crude oil is also likely to be classified as Packing Group II, although Bakken crude can fall within either Packing Group I or II. DOT, Operation Safe Delivery Update (2014).

We urge PHMSA to stop shipments of Bakken and other explosive crude in any tank cars that do not comply with the new tank car standards in the first year under the new rules. In recent emergency orders, DOT has made findings that the surge in crude-by-rail and in particular Bakken crude have created imminent hazards that warrant emergency measures. Those hazards stem, in part from the unsafe tank cars, and in part from the use of unit trains to ship the crude, in addition to the volatility and other dangerous properties of the Bakken crude. PHMSA should accelerate the phase-out of unsafe tank cars for shipping Bakken crude for all of these reasons.

Given recent events, however, it would be precarious to predicate tank car standards or the phase-out on whether a hazardous material, or at least Bakken crude, falls within Packing Group I or II. Indeed, the Lac Mégantic accident uncovered the misclassification of Bakken crude as Packing Group III when it appropriately belonged in Packing Group II. Lac Mégantic Investigation §§ 1.19.2.1 & 2.8.3, at 51, 112-13 (testing showed the Bakken crude involved in the Lac Mégantic accident was Packing Group II despite being marked as Packing Group III). The U.S. Operation Safe Classification ("Bakken blitz") similarly uncovered the misclassification of Bakken as Packing Group III when it belonged in Packing Group I or II. FRA Letter to American Petroleum Institute (July 29, 2013); DOT, Operation Safe Delivery Update (2014).

DOT appropriately responded to the misclassification of Bakken by issuing a safety advisory and ultimately an emergency order directing rail shipment of bulk quantities of all types of crude oil to comply with Packing Group I or II hazardous materials regulations, without differentiating between the two packing groups. Safety Alert–January 2, 2014; Emergency Order DOT-OST-2014-0025 (Feb. 24, 2014). This precautionary approach will prevent further misclassification errors. It is also warranted in light of the American Petroleum Institute's insistence that Bakken crude is no more volatile than other crude even in the face of contrary evidence. *See* David Thomas, *Refiners lobby says DOT-111 is 'fine' for shipping Bakken crude*, Railway Age (May 10, 2014).

While there certainly are valid safety reasons to degasify Bakken to reduce its volatility and other dangerous elements, degasification should not allow Bakken or other volatile crude to be shipped in DOT-111 and other noncompliant tank cars for longer periods of time in light of the hazards. *See* 79 Fed. Reg. at 45,043, 45,061.

F. PHMSA Needs to Assess the Risks and Harm During Each Phase-Out Year to Ensure It Is Adequately Protecting the Public Against Unacceptable Risks of Train Disasters.

PHMSA predicts that, without the proposed rule, 15 mainline accidents would occur in 2015 and in each of the early years under the new rules, falling off to about 5 mainline derailments by 2034. RIA at 4. The reduction from 15 to 5 accidents per year would be due to the phase-out of noncompliant tank cars and a prediction that the surge in crude by rail shipments will taper off over time. RIA at 7, 9, 23, 35. Accordingly, for the initial years under the rule – those relevant to the phase-out timeline – the estimate of 15 rail accidents per year is the reference point.

In addition, the RIA estimates that the United States would, in the absence of the rule, experience the equivalent of 10 additional rail accidents of higher consequence over the next 20 years, the timeframe assessed. RIA at 4. It monetized the environmental damage, injuries and fatalities as over $1.2 billion for nine of the accidents, which would be comparable to Lac Mégantic, and over $6 billion for one. RIA at 41-42.

PHMSA's estimates are based on a growing percentage of the tank fleet consisting of new tank cars that meet the new tank car standards, which means that the DOT-111 tank cars currently comprise a disproportionate proportion of the risk underlying DOT's predictions. PHMSA has not quantified the risk posed by retaining DOT-111 tank cars in the crude and ethanol fleets for four more years. However, it and others have compared the crashworthiness of various tank car designs. The estimates of the increase in crashworthiness of the CPC-1232 tank cars compared to the DOT-111s range from 50-75%, as stated above.

In conjunction with the proposed rule, DOT has developed methodologies for calculating the effectiveness of tank car designs in avoiding damage and spills in rail accidents. Specifically, DOT calculated the increase in effectiveness of the tank car options compared to an unjacketed DOT-111 tank car. According to these calculations, which include some but not all of the tank car features, the PHMSA car is 55% more effective at avoiding damage and a spill in an accident than the unjacketed DOT-111. The AAR 2014 option is more than 51% effective and the enhanced CPC-1232 more than 41% more effective. RIA at 117.

However estimated, it is clear that the various tank cars currently in hazardous materials shipping vary in the risks they pose to the public. The unjacketed DOT-111s pose the most extreme risks, while jacketed CPC-1232 tank cars, although still too dangerous, pose less severe risks than the DOT-111s. PHMSA asserts in the proposed rule that is it pursuing a risk-based approach to the phase-out be predicating the phase-out on packing group classification. 79 Fed. Reg. at 45,061. While the packing group classifications focus on flammability and volatility, they fail to correlate to the risks presented by the tank car designs and the full nature of the products being shipped.

The proposed rule and RIA are opaque in correlating the phase-out stages with the hazards. It is incumbent upon PHMSA to lay out the number of each type of noncompliant tank car and its relative propensity to release oil in an accident, and to describe how the proposed phase-out and alternative schemes would minimize the hazards, as required by NEPA.

While the proposed rule and RIA are far from explicit, they appear to envision that few tank cars will be subject to the October 1, 2017 deadline for Packing Group I. For example, "PHMSA assumes that no unjacketed tank cars would be in Packing Group I service in 2015 and 2016, in the absence of this rule," although this statement is conclusory and the basis for it is left unstated. RIA at 109. If true, that would mean the first stage of the phase-out would fail to remove the most dangerous tank cars from hazardous fuel shipment. PHMSA also assumes that "non-jacketed cars are used for both Packing Groups II and III, and that shippers would adhere to the October 1, 2018 deadline" rather than try to use for them for Packing Group III materials for two more years. RIA at 89. This assumption seems to confirm that PHMSA would not be requiring the phase-out of unjacketed tank cars until October 1, 2018 (or possibly October 1, 2020).

PHMSA should be transparent about how many old tank cars are used to ship Packing Group I materials in unit trains and how many of those ship crude oil as opposed to other flammable liquids. This type of break down is necessary to understand the risks the public would continue to face each year of the phase-out. As explained below, other phase-out approaches would minimize the extreme risks from shipping crude and other hazardous materials in noncompliant tank cars more expeditiously and be more justifiable from a health, safety and environmental perspective.

IX. PHMSA NEEDS TO DO MORE TO ENSURE THE PROPER CLASSIFICATION AND CHARACTERIZATION OF CRUDE OIL, AND PREVENT FURTHER ABUSE OF TESTING PROTOCOLS BY INDUSTRY

A. All Bakken Crude Should Be Classified By Rule As Packing Group I.

Testing and characterization of crude is of particular importance because the classification of the crude determines which packing group it is part of, which in turn affects the timeline for the implementation of updated tank car standards. It is further of importance because PHMSA has historically relied on the industry to police itself, and the record is now clear that the industry has failed to do so in a way that protects the public. As discussed previously in these comments, a recent effort (aka "the Bakken blitz") revealed significant misclassification by industry to downplay the risks of Bakken crude. Indeed, even today, industry spokespeople insist that Bakken crude should be treated the same as all other crudes, in defiance of abundant evidence to the contrary.[28] Government officials have also acknowledged that past testing has been inadequate to recognize the risks of Bakken and other unusually dangerous crudes.[29]

In light of the history of misclassification by industry and the confusing testing protocols described further below, we urge PHMSA to end its reliance on industry to police itself, and classify all Bakken crude, by rule, as Packing Group I. This default classification will avoid the risks of misclassification and ensure that the most dangerous crudes are subject to the fastest phase out of unsafe rail cars.

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[28] As PHMSA acknowledges, Bakken crude "is more volatile than most other types of crude– which correlates to increased ignitability and flammability." http://www.phmsa.dot.gov/pv_obj_cache/pv_obj_id_10B6171B1F17B07B32E437ADB3AC37F61DD70400/filename/07_21_14_Operation_Safe_Delivery_Report.pdf

[29] Reuters, *U.S. promises new look at oil train dangers, acknowledges test flaws* (Sept. 9, 2014).

B. PHMSA Should Require Degasification Of All Crude Shipped By Rail.

PHMSA has used its regulatory authority to require the removal of toxic, explosive, and corrosive gases from crude for transport by pipeline for years. Degasification is also common practice in some places, including parts of Texas, subject to higher regulatory standards. However, no such requirement exists for the huge volumes of crude shipped by rail out of North Dakota. PHMSA should require degasification of crudes prior to rail car transport. Even the state of North Dakota, an unabashed proponent of crude development and shipment via rail, has begun considering requirements for degasification under state law.

With Bakken crudes exhibiting vapor pressure ranges from 10.1 to 14.4 psia, as tested by PHMSA during Operation Safe Delivery, degasification will immediately reduce the volatility of Bakken crude and reduce the explosion risks. While we do not agree that degasification would reduce the risks sufficient to allow crude to be shipped in DOT-111s and other unsafe rail car models, degasification is a critical first step in reducing risks to the public. The only justification for failing to do so is the marginal increased costs to shippers, which is not a sufficient basis on which to expose the public to severe risks.

C. The Rule Should Impose Robust And Coherent Mandatory Testing And Characterization Requirements.

While providing a default characterization for Bakken crude as Packing Group I, and requiring degasification are critical first steps, it remains important to impose and maintain a coherent and robust testing protocol to ensure that all materials are properly classified and that first responders are properly notified of rail car contents. The current regime is a long way from meeting that standard. As expressed in the GAO report on crude by rail:

> PHMSA needs to clarify its crude oil testing requirements, including to more clearly state which tests should be done and with what frequency. One of the terminal operators told us that without clearer guidance, they are unsure whether they are performing the right tests and testing with sufficient frequency. They are also concerned they may be incurring unnecessary expense from over-testing. PHMSA's July 2014 Notice of Proposed Rulemaking does not state which tests should be performed or specifically how often, but does state that testing methods used should enable complete analysis, classification, and characterization of the material as required by PHMSA's regulations and that the frequency of testing should account for the potential variability of the material.

GAO, *Department of Transportation Is Taking Actions to Address Rail Safety, but Additional Actions Are Needed to Improve Pipeline Safety* (August 2014).[30]

The proposed rule would benefit from a number of improvements. For example, PHMSA should propose regulatory changes related to vapor pressure of a material, instead of merely soliciting

[30] http://www.gao.gov/assets/670/665404.pdf

comment from the regulated community.[31] Vapor pressure should be a mandatory measure to characterize crude volatility. Atmospheric tests like flashpoint testing fail to contain light ends that contribute to volatility of the crude and may lead to inaccurate results. Sampling for vapor pressure needs to require sealed cylinder sample collection or other standards that preserve lighter fractions and show true vapor pressure of car contents. API's new standards leave this decision up to the offeror (API rules at 5.6.4.1.2, Sample Container for PG Assignment); instead, appropriate sampling should be mandated by PHMSA.

In the new API standards, which PHMSA indicates may be adopted in the future, vapor pressure tests are relegated to "Alternate best practices for determining boiling point" (see proposed standards at 5.6.3.2). We believe that both boiling point and vapor pressure tests should be required, with numeric boiling point assessed using the most precise standard that accommodates crudes like Bakken with large portions of light ends (e.g., mandating *ISO 4626 Volatile organic liquids—Determination of boiling range of organic solvents used as raw materials* for Bakken and other very light fracked crudes).

Similarly, in order to prevent off-gassing during offloading volume inspections, when inspectors ensure there is minimal heel left in the tank car, rail tank cars should be required to have closed system gauging equipment. Otherwise, visual inspections through manways are required, leading to off-gassing at inspection site, and exposure of inspectors and other rail yard workers to toxic fumes.

PHMSA should also require multistage testing to better understand changes in transit. Mixed products like fracked crude change chemically while in transit, both as full cargos and as "empties" when the heel is exposed to high levels of atmospheric gases. Testing schemes should include all regulated variables at both the onloading and offloading stages of rail transport. Additional testing should include analysis of changes occurring during the return of "empties," when sloshing of the heel and mixing with atmospheric gases could lead to increased toxicity of vapors and emissions.

PHMSA should also reinstate Hazardous Materials Rules, in place prior to 1990, that required pressure cars for products that exceed the 27 psia threshold during any part of the transport process, from loading to offloading of rail tank cars. As described in the proposed rule,

> As mentioned in the Background section of this preamble, above, prior to 1990 the HMR clearly indicated that the packaging requirements for flammable liquids are based on a combination of flash point, boiling point, and vapor pressure. The regulations provided a point at which a flammable liquid had to be transported in a tank car suitable for compressed gases, commonly referred to as a ''pressure car'' (e.g., DOT Specifications 105, 112, 114, and 120 tank cars). Specifically, § 173.119(f) indicated that flammable liquids with a vapor pressure that exceeded 27 psia but less than 40 psia at 100 °F (at 40

[31] *See* Pichler and Lutz, *Why crude oil vapor pressure should be tested prior to rail transport* (2014), available at http://www.cscanada.net/index.php/aped/article/view/5098/pdf_2) ("vapor pressure testing allows samples to be tested 'as is', by keeping volatiles inside a pressurized container—a natural advantage compared with atmospheric methods. Vapor pressure testing is the first step in preventing accidents that may result from crude oil boiling over inside rail cars.")

> psia, the material met the definition of a compressed gas), were only authorized for transportation in one of the authorized pressure cars. The older regulations recognized that those flammable liquids that exhibited high vapor pressures, such as those liquids with dissolved gases, require additional care in packaging.

79 Fed. Reg. at 45,044. A review of risks associated with crude transport by unit train, a new phenomenon since the previous rules were altered, may indicate a need to revise the PSIA threshold downward from 27 PSIA to a threshold that recognizes the immediate proximity of multiple cars bearing explosive or flammable cargoes.

Flash point tests, as recommended by API's new standards, indicate a pass/fail test of less than 73 degrees "suffices" to categorize Class 3 flammable liquids into PG I - III. However, high variability of vapor pressure at wide ranges of flash points lower than 73 degrees may mean that crudes that exceed psia standards while in transit are not appropriately identified and packaged in a pressure car.

Lastly, in light of the history of weak testing requirements and poor industry compliance, it is highly inappropriate for PHMSA to propose to "provide flexibility and relax the sampling and testing requirements for offerors who voluntarily use the safest packaging and equipment replacement standards." Until the new standards are in place and proven to be effective, it would premature for PHMSA to decide sampling and testing requirements are unnecessary. Emergency responders benefit greatly from having accurate information about hazardous shipments.

X. PHMSA SHOULD ADOPT OPERATIONAL CONTROLS THAT PROTECT THE PUBLIC.

A. PHMSA Should Ensure the Safest Routes Are Used for Crude-By-Rail and Ethanol Unit Trains.

PHMSA proposes to apply the rail routing regulations for explosive, radioactive, and toxic by inhalation materials (found at 40 C.F.R. § 172.820) to HHFTs. 79 Fed. Reg. at 45,042. Those regulations require rail carriers to collect data on the shipment of dangerous materials and determine the safest routes, using 27 factors. *Id.*; 49 C.F.R. § 172.820(c). The regulations also give DOT the authority to review the proposed routes and require a rail carrier to use an alternative route if the proposed route is not safe enough. 79 Fed. Reg. at 45,029; 49 C.F.R. § 172.820(j).

We support PHMSA's proposal to extend the current routing requirements for other high-risk cargo to trains carrying crude oil and other flammable liquids. However, PHMSA should also evaluate whether those existing standards should be strengthened.

We agree with PHMSA that the "costs to society, the government, and the rail industry of an accident involving large shipments of flammable liquid are high. If no action is taken, the threat of catastrophic accidents in large populated areas or other sensitive environments will continue." RIA at 56. Several robust studies by major academic risk-minimization hazmat routing researchers in the US and Canada

have agreed that re-routing around major cities can reduce population exposure to disaster risks from rail transport of hazardous cargo.[32]

In January 2014, the NTSB recommended that at a minimum, DOT should extend hazardous material routing requirements to trains transporting large volumes of flammable liquid. The NTSB also recommended that, where technically feasible, DOT should require "rerouting to avoid transportation of such hazardous materials through populated and other sensitive areas." 79 Fed. Reg. at 45,029; RIA at 55. In response to the NTSB actions, the Class 1 Railroads agreed to voluntarily apply routing requirements to trains carrying 20 carloads or more of crude oil. However, this voluntary commitment is insufficient because it does not apply to other rail operators (e.g. shortlines), does not apply to all HHFTs, is unenforceable, and is not transparent to the public. RIA at 55.

PHMSA should, at the very least, ensure that crude oil and other flammable liquids are governed by the same routing standards as other hazardous materials. Rerouting of all HHFTs would impose little cost on shippers or rail carriers. Not only has the industry voluntarily agreed to apply these same routing requirements to a subset of HHFTs, which implies that rerouting does not impose a significant burden, but rerouting would not be required if no practical alternative route is available. *Id*. at 60. Furthermore, any costs imposed by rerouting requirements would be vastly outweighed by the benefits. Accordingly, we strongly support the PHMSA proposal to apply existing routing requirements for hazardous cargo to HHFTs.

However, the proposed rule does not say whether DOT is regularly reviewing the routes chosen by rail carriers under the current regulations or how often and how is exercises its authority to veto unsafe routes. It is entirely unclear whether the existing routing regulations will sufficiently address the hazards posed by crude oil unit trains. Therefore, in addition to applying existing routing requirements for hazardous cargo to HHFTs, PHMSA must explain why it believes those regulations are sufficiently protective. If the existing regulations fall short of addressing the concerns raised here, PHMSA must adopt additional routing requirements that adequately protect the public. PHMSA must also ensure that these routing decisions, including both alternative analyses by rail carriers and safety vetoes by the government, are transparent and publicly available.

B. PHMSA Should Impose Speed Restrictions.

Recognizing that speed can contribute to the occurrence and severity of a derailment, PHMSA proposes to codify a 50 m.p.h. speed limit for HHFTs in all areas and to implement one of the following three speed restriction options for HHFTs that contain any tank cars not meeting enhanced tank car standards:

(1) a 40-mph maximum speed restriction in all areas;

(2) a 40-mph speed restriction in areas with a 100K+ population; and

(3) a 40-mph speed restriction in high threat urban areas

[32] NTSB, Rail Safety Forum: Transportation of Crude Oil and Ethanol, April 22-23, 2014; Notes of Fred Millar; Webcast archived at http://ntsb.capitolconnection.org/042314/ntsb_archive_flv.htm

79 Fed. Reg. at 45,047, 45,076.

We strongly support imposing speed restrictions as part of this rulemaking. Slower speeds are critical to avoiding accidents. They allow a locomotive engineer to identify a safety problem ahead and stop the train before an accident. RIA at 130. Lower speeds also translate to reduced kinetic energy and thus reduced severity of an accident should on occur. For instance, engineers and experts estimate that if an accident occurred at 40 mph instead of 50, we should expect a reduction of kinetic energy by 36% and a corresponding 36% reduction in the severity of an accident if it were to occur. RIA at 130. From this research, PHMSA concludes "that a 10 m.p.h. speed reduction would reduce the harm of a derailment by 36%." 79 Fed. Reg. at 45,046. Given the role higher speeds play in both causing and increasing the severity of accidents, we urge PHMSA to adopt speed restrictions in the rule.

We also agree that despite the voluntary speed limits adopted by AAR, regulatory action is necessary "because OT-55 is a recommended practice and, as such, does not carry the weight of law." RIA at 129. As explained in the proposed rule, a railroad currently "can, without concern of a penalty, move these trains at speeds exceeding the industry standard and as discussed previously, increase the energy and likelihood of catastrophic damage to tank cars involved in a train accident. Codifying this voluntary commitment will ensure that the benefits of the speed restrictions are realized indefinitely. Without codification of these requirements, the speed restrictions could be subsequently lifted prematurely and increase risk." 79 Fed. Reg. at 45,047.

Turning to the three proposals for reducing speed limits to 40 m.p.h. for HHFTs that contain any noncompliant tank cars, we urge PHMSA to adopt the first option, which would impose a maximum 40 m.p.h. speed limit in all areas. Imposing a 40 m.p.h. speed limit only in the largest cities or "high threat urban areas" would be far less protective of the public than requiring safer speed limits in all populated and sensitive areas. First, the option that would focus speed restrictions on areas with more than 100,000 people excludes far too many populated areas that in harm's way. For example, many U.S. cities that have experienced dangerous and potentially deadly HHFT derailments would not be covered by safer speed limits using this threshold, including Lynchburg, Virginia (78,000 people); Painesville, Ohio (20,000 people); and Vandergrift, PA (5,000 people).[33] A population density approach would also leave sensitive environments, drinking water supplies, schools, industrial facilities and other places where people congregates without this protection. Second, a threshold for safer speed limits that focuses on "high threat urban areas" is irrelevant and inappropriate in this context, as that designation was designed to identify terrorist targets. Unit trains carrying explosive crude oil or ethanol pose risks all along the rail line, not only in those areas terrorists may target.

In assessing the benefits of reducing speeds of HHFTs, PHMSA must consider both the benefits of reducing the incidence of accidents and the severity of derailments that occur. Currently, however, the RIA quantifies only benefits from reducing accident severity. RIA at 130. In light of the extreme hazards of shipping explosive crude and ethanol, and the benefits of speed limits in both preventing accidents and reducing the damage from them, PHMSA should impose a 40 m.p.h. speed limit for HHFTs that contain any noncompliant tank cars.

[33] U.S. Census, 2013 data available at: http://quickfacts.census.gov/qfd/states/51/5147672.html

The proposed rule would impose a 40 m.p.h. speed limit only as a transition measure. More specifically, one all of the tank cars in the HHFT comply with the new tank car standards, the speed limit would revert to 50 m.p.h. 79 Fed. Reg. at 45,076. We wholeheartedly support applying the speed limits to any HHFT that has *any* noncompliant tank cars, as it only takes one exploding tank car to create a disaster. However, we urge PHMSA to refrain from making this reversion to a 50 m.p.h. automatic and instead leave it to another rulemaking to decide whether the hazardous tank cars, explosiveness of the cargo, and risks of derailments have been reduced sufficiently to warrant a return to higher speed limits. Not only would it be exceedingly difficult to ensure compliance with speed limits that depend on the safety feature of each individual tank car in a unit train, but the record is replete with evidence that the new tank cars (particularly the weaker options) will not remove all serious risks to the public from shipping explosive cargo in unit trains.

Federal Rail Administration official Karl Alexy has noted publicly that "[a]t train speeds of 30 to 40 mph, you cannot build a tank car robust enough to withstand puncture in unit train derailments."[34] It is important to note that the crude oil train that derailed, caught on fire (with flames reportedly reaching 100 feet in the air), and plunged several rail cars into the James River in Lynchburg, Virginia on April 30, 2014 was only traveling 24 miles an hour.[35] Further, CPC-1232 tank cars derailed in that accident, at least one of which ruptured and released its contents.[36]

In fact, in many of the serious crude oil and ethanol train derailments that have occurred over the last few years, those trains were traveling well below 40 mph. The worst of these accidents happened in Lac Mégantic, Quebec, Canada in July 2013, when an unattended train carrying Bakken crude oil derailed, causing the deaths of forty-seven individuals, extensive damage to the town center, the evacuation of approximately 2,000 persons from the surrounding area, and economic losses estimated at more than $1.2 billion. RIA at 18. Even though roughly 15% of the tank cars in that accident derailed at estimated speeds of 40 mph or less, these tank cars still were breached and severely damaged, spilling their contents.[37] Other significant accidents over the years have occurred at speeds below 40 mph (RIA at 15):

- In May 2014, 5 tank cars derailed at just 9 m.p.h. in LaSalle, Colorado, spilling 5,000 gallons of crude oil.
- In February, 2014, 21 tank cars derailed at 31 m.p.h. in Vandergrift, Pennsylvania, spilling 10,000 gallons of crude oil.

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[34] Statement during Federal Rail Safety Forum, April 2014
https://www.ntsb.gov/news/events/2014/railsafetyforum/presentations/Panel%204_A_Karl%20Alexy.pdf.
Reported here: http://www.nola.com/business/index.ssf/2014/07/dot_announces_new_proposals_to.html

[35] "Oil Train That Crashed in Lynchburg Was Moving Below New Speed Limit," *The Wall Street Journal* (May 1, 2014) *available at* http://online.wsj.com/news/articles/SB10001424052702304178104579535732934152004.

[36] Jan Mouawadmay, *Despite Orders, Federal Tank-Car Safety Measures Are Slow in Coming*, New York Times, May 8, 2014, available at http://www.nytimes.com/2014/05/09/business/despite-orders-federal-tank-car-safety-measures-are-slow-in-coming.html?_r=0.

[37] Transportation Safety Board of Canada, RAILWAY INVESTIGATION REPORT
R13D0054; RUNAWAY AND MAIN-TRACK DERAILMENT, MONTREAL, MAINE & ATLANTIC RAILWAY
FREIGHT TRAIN MMA-002, MILE 0.23, SHERBROOKE SUBDIVISION, LAC-MÉGANTIC, QUEBEC, 06 JULY 2013
http://www.tsb.gc.ca/eng/rapports-reports/rail/2013/r13d0054/r13d0054.pdf

- In November 2013, 26 tank cars derailed at 39 m.p.h. in Aliceville, Alabama, spilling 630,000 crude oil that caught on fire.
- In August 2012, 17 tank cars derailed at 25 m.p.h. in Plevna, Montana, spilling 245,336 gallons of ethanol that caught on fire.
- In July 2012, 3 tanks cars derailed at 23 m.p.h. in Columbus, Ohio, spilling 53,347 gallons of ethanol that caught on fire.
- In October 2011, 10 tank cars derailed at 34 m.p.h. in Tiskilwa, Illinois, spilling 143,534 gallons of ethanol that caught on fire.
- In June 2009, 19 tank cars derailed at 19 m.p.h. in Rockford/ Cherry Valley, Illinois, spilling 232,963 gallons of ethanol that caught on fire.
- In October 2006, 23 tank cars derailed at 20 m.p.h. in New Brighton, Pennsylvania, spilling 485,278 gallons of ethanol that caught on fire.

During the April 2014 NTSB forum on rail safety, Dr. Jeong of DOT's Volpe Research Center reported results from their sophisticated "Conditional Probability of Release" model used to analyze the FRA database of rail accident reports showing breach rates for all tank car designs, even the most robust. The modeling appears to apply to average speeds of 27 m.p.h., indicating the following rates of lading loss among tank cars in mainline accidents:[38]

- "legacy" DOT-111s: 26.6%
- Legacy jacketed: 12.8 %
- CPC-1232 half-height head shields: 13.2 %
- COC-1232 with full height head shields: 6.4%
- AAR's proposed design for more robust car with 9/16" shell: 4.2%

Serious accidents and extreme damage have resulted at speeds far lower than 50 m.p.h. and even lower than 40 m.p.h. The accident record and research results demonstrate a compelling need for speed limits for HHFTs that have *any* noncompliant tank cars, as the proposed rule recognizes. The only option that would be sufficiently protective of the public during the transition is option 1, which would impose a 40 m.p.h. in all areas. We urge PHMSA to go further and consider an even lower speed limit of 30 m.p.h. during the transition period. We also urge PHMSA not to include an automatic termination of the lower speed limits, but instead to assess whether the predicted safety benefits have materialized before lifting the 40 m..p.h. speed limits.

A. PHMSA Should Mandate Effective Braking Systems.

PHMSA proposes that all HHFTs must have two-way end of train (EOT) braking devices or distributed power (DP), or travel at 30 m.p.h. or lower by October 15, 2015. Additionally, for the PHMSA and FRA designed tank car option, PHMSA proposes that all HHFT tank cars built after October 1, 2015, and HHFT tank cars retrofitted to the PHMSA and FRA designed car standard, must use ECP brakes or travel at no greater than 30 m.p.h. 79 Fed. Reg. at 45,048-51.

The need for advanced braking systems on HHFTs is well supported by extensive FRA research and simulations. RIA at 146-49. It is expected that all Class I and Class II railroads' HHFTs already have

[38] NTSB, April 2014/ Dr. Millar.

EOT devices or DP. RIA at 153. ECP brakes, however, would be an additional safety element that would results in substantially greater reductions in kinetic energy reduction than EOT or DP. As stated above in connection with the PHMSA tank car option, ECP brakes reduce accident severity by 36% compared to conventional braking systems and offer double the improved protection as EOT or DP systems. 79 Fed. Reg. at 45,052; RIA at 157. ECP would reduce the damages associated with HHFT accident," including both reductions in property damage caused as well as the number of fatalities and/or injuries." RIA at 157. ECP brakes also "greatly reduce the risk of runaway trains, and reduce the probability of an incident by providing 40 to 60 percent shorter stopping distances." RIA at 159. ECP brakes also offer several other superior qualities. "They have the potential to save fuel and reduce emissions, reduce wear and stress on wheels and brake shoes, and provide train engineers greater control on the braking characteristics of trains." RIA at 159.

Given the enormous size and weight of unit HHFTs that are at times in excess of 100 tank cars and the outstanding performance and environmental benefits of ECP brakes, we strongly recommend ECP brakes as an essential component of this rulemaking. As stated above, we understand that that industry representatives have raised concerns about immediate implementation of ECP braking systems in unit trains. If PHMSA determinates that ECP braking systems cannot be implemented immediately, we urge PHMSA to impose a 30 m.p.h. speed limit for unit trains that lack ECP brakes.

XI. NOTIFICATIONS TO STATE EMERGENCY RESPONSE CENTERS SHOULD BE EXPANDED BEYOND WHAT IS REQUIRED UNDER THE EMERGENCY ORDER

On May 7, 2014, the Department of Transportation issued an Emergency Order (DOT-OST-2014-0067) requiring railroad companies with trains transporting one million gallons of Bakken crude oil to submit notifications to state emergency response centers ("SERCs") in each state in which the railroad operates trains transporting 1 million gallons or more of Bakken crude oil. This gallon threshold would translate to approximately 35 tank cars laden with crude oil. The disclosures must: (1) estimate the number of trains expected to travel weekly through each county within the state; (2) identify and describe the petroleum crude oil expected to be transported; (3) provide basic emergency response information;[39] (4) identify the rail routes over which the material will be transported; and (5) a railroad point of contact for SERCs and other emergency responders. Emergency Order, Docket DOT-OST-2014-0067, at 2, 15 (May 7, 2014). The initial notifications were due in early June 2014, and the railroads must update the notifications prior to making material changes in the estimated volumes or frequencies of trains traveling through any county. *Id*. at 2, 13, 15-16. The Order specifies that any increase or decrease in the number of implicated trains per week constitutes a material change. *Id*. at 13, 15-16.

The proposed rule would codify and clarify the SERC notification requirements. 79 Fed. Reg. at 45,040-42. We agree that the recent "accidents have demonstrated the need for action in the form of additional communication between railroads and emergency responders to ensure that the emergency responders are aware of train movements carrying large quantities of crude oil through their communities." *Id*. at

[39] The Emergency Order requires that the notifications contain information specified in 49 C.F.R. part 172, which calls for: "(1) The basic description and technical name of the hazardous material as required by §§ 172.202 and 172.203(k), the ICAO Technical Instructions, the IMDG Code, or the TDG Regulations, as appropriate (IBR, see § 171.7 of this subchapter); (2) Immediate hazards to health; (3) Risks of fire or explosion; (4) Immediate precautions to be taken in the event of an accident or incident; (5) Immediate methods for handling fires; (6) Initial methods for handling spills or leaks in the absence of fire; and (7) Preliminary first aid measures." 49 C.F.R. § 172.602.

45,041. However, we urge that the final rule: (a) change the threshold for the SERC notifications to extend to all trains carrying crude oil or ethanol; and (b) ensure that the notifications are affirmatively made available to the public in easily accessible form upon their submission. With these changes, the notifications will better supply emergency responders and communities along the rail lines with critical information needed to make decisions about toxic exposures and to safeguard people and private property in harm's way.

A. All Trains Shipping Crude Oil or Ethanol (or At Least High-Hazard Flammable Trains) Should Be Subject to the SERC Notification Mandates.

We propose that the final rule lower the threshold for SERC notifications to trains with one or more cars carrying crude oil or ethanol. The threshold should be lowered from 1 million gallons to one loaded tank car. Alternatively, the threshold should accord with the trigger for the rest of the rulemaking which would be applicable to high-hazard flammable trains, those with 20 or more tank cars loaded with crude or ethanol. Finally, the trigger should be expanded beyond Bakken crude to cover all crude oil and ethanol. Changing the trigger for the SERC notifications would help the Emergency Order achieve its purpose of notifying responders of hazardous crude trains that pose public health and safety threats.

First, the one-million-gallon reporting threshold is unsupported by the recent accident record. Accidents occur for a many reasons that are not related to the length of the train or number of tank cars in the train. While unit trains pose heightened risks because of the number of cars that can collide and breach and the amount of hazardous fuel that can ignite and explode, many recent spills, explosions, fires and evacuations occurred when far less than one million gallons spilled. For example, the Lynchburg, Virginia accident in April 2014 involved one tank car spilling its load into the James River, a fire and evacuation of 350 people. RIA at 199. The Casselton, North Dakota in December 2013 train collision spilled approximately 475,000 gallons of crude, far less than the one-million-gallon threshold, yet it exploded into a fire ball and caused the evacuation of 1400 people. RIA at 201. In light of the extensive harm when far less than one-million gallons of crude has spilled, a one-million-gallon reporting threshold is not "a reasonable threshold." Emergency Order at 11. Shipping volatile crude in any amount, particularly in unsafe tank cars that are prone to puncture, presents public health and safety threats. Accordingly, we urge DOT to require notification to SERCs for rail operators carrying as little as one tank car of crude.

Second, the one-million-gallon threshold is inconsistent with the compliance threshold PHMSA has proposed for the rest of the proposed rule. The proposed rule would adopt a series of tank car and operational controls for high-hazard flammable trains, defined in pertinent part as a train with 20 or more cars loaded with crude oil or ethanol, which translates to approximately 600,000 gallons. By proposing a 20-car cut-off, PHMSA is suggesting that a train transporting more than that volume of crude oil or ethanol poses a serious threat to public health, safety and the environment. It is inconsistent for PHMSA to propose tank car safety standards and operational controls for trains carrying 20-tank cars or 600,000 gallons of crude oil or ethanol, while having a much higher trigger for notifying emergency responders of the train routes and basic emergency response information. A risk-based approach would require SERC notifications for all trains posing the risks PHMSA seeks to reduce in the other portions of the proposed rule.

Third, in its 1996 oil spill response plan regulation, PHMSA adopted a 42,000 gallon per packaging trigger for preparation of comprehensive oil spill response plans, which include substantial training and coordination between public and private emergency responders. 61 Fed. Reg. 30,533 (1996). Presumably, PHMSA believed a spill involving that amount of oil posed serious risks that warranted rigorous emergency preparations, although its 1996 rule defeated the response planning goals by basing it

on a single tank car rather than the entire train. Heeding NTSB recommendations, PHMSA has published an advance notice of proposed rulemaking to initiate the rulemaking to change the trigger from applying to a tank car carrying more than 42,000 gallons to a threshold for a train carrying oil products. We are submitting comments urging PHMSA to require comprehensive oil spill response plans for trains with a single tank car laden with crude oil or ethanol because of the severe human and environmental risks posed by an explosion or spill of even one tank car. Our comments in response to the ANPR support a single tank car threshold for the SERC notifications as well and are incorporated by reference in that regard. PHMSA need look no further than the guidance provided in the Department of Transportation's "Orange Book" guide for emergency first responders, which recommends clearing and evacuating a half-mile area surrounding even just one rail car on fire. U.S. Department of Transportation / Transport Canada, Emergency Response Guidebook: A Guidebook for First Responders During the Initial Phase of a Dangerous Goods/Hazardous Materials Transportation Incident (2012). In addition, a single tank car threshold is consistent with PHMSA's proposed 40 m.p.h. speed limits, which would apply to any HHFT that has even a single tank car that does not comply with the new tank car standards. 79 Fed. Reg. at 45,047.

Fourth, in setting the one-million-gallon threshold, DOT relied on U.S. Environmental Protection Agency regulations for facility oil spill response planning. Emergency Order at 11; *see* 40 C.F.R. § 112.20. However, the EPA regulation governs response planning for "non-transportation" related onshore facilities that may cause substantial harm to the environment. 40 C.F.R. §112.20(a). In identifying the type of facility that could cause substantial harm to the environment, EPA carved out facilities with a capacity of one million gallons or more. 40 C.F.R. § 112.20(f)(1)(ii). A stationary facility is exposed to risks that are different in kind and magnitude when compared to trains carrying explosive cargo. Unlike buildings, trains derail at high speeds and collide with one another and with other objects. As demonstrated in recent accidents, tank cars, particularly the deficient DOT-111 and CPC-1232 tank cars, are prone to puncture, causing oil spills, fires, and explosions in derailments. A threshold established for non-transportation facilities has little relevance to rolling stock like crude-by-rail trains.

Finally, as PHMSA acknowledges through the proposed rule, ethanol is highly flammable and spills of tar sands crude can cause contamination that is extremely difficult to clean up. Accordingly, the SERC notification requirements should extend to trains carrying any crude oil as well as ethanol.
In sum, given the known inherent hazards of crude and ethanol transported in any quantity, PHMSA should make SERC notification requirements applicable to operators carrying any amount of crude oil or ethanol.

B. The SERC Notifications Should Affirmatively Be Made Available to the Public in Easily Accessible Formats.

Shortly after issuance of the Emergency Order, controversy arose over public disclosure of the notifications. In particular, the railroads sought to enter into nondisclosure agreements with the SERCs in order to keep the train routes and emergency preparedness information from the public. 79 Fed. Reg. at 45,041. For its part, the DOT issued a document providing answers to frequently asked questions ("FAQ Document") in which it indicated that "DOT prefers that this information be kept confidential, and acknowledged that railroads may have an appropriate claim that this information constitutes confidential business information, but that such claims may differ by state depending on each state's applicable laws." *Id*. Neither the Emergency Order nor DOT's FAQ Document required that states sign confidentiality agreements in order to receive the SERC notifications, and DOT eventually decided not to designate the notifications as Sensitive Security Information ("SSI") that must be kept confidential. *Id*. When pressed by the railroads to agree to confidentiality, some states reportedly agreed to withhold the information from the public, while others refused, deciding instead to let their public records laws control public

access.[40] Throughout the country, news outlets and nongovernmental organizations filed public records requests seeking access to the notifications, including requests filed by Earthjustice on behalf of Sierra Club and Sightline Institute in over a dozen states. Most states determined that the notifications did not contain confidential business information and had to be released to the public, despite the pleas of the railroad companies seeking secrecy.[41] Against this backdrop, PHMSA seeks public comment on whether the SERC notifications should be made public.

In response, we show below that the SERC notifications are ineligible for SSI treatment and do not constitute confidential business information. Moreover, we urge DOT to require submission of the SERC notifications to DOT, which would make them available to the public under the federal Freedom of Information Act, and to establish mechanisms for obtaining and posting the information in electronic format so that it will be easily accessible to the public.

1. The SERC notifications cannot be kept secret as SSI.

Prior to September 11, 2001, the Federal Aviation Authority was the primary agency that engaged in security screening programs and had the statutory authority to prohibit "disclosure of information obtained or developed in carrying out security or in research and development activities."[42] In the aftermath of the September 11 attacks, Congress enacted a series of statutes that gave DOT authority to conduct security research and develop programs.[43] The statute describes the scope of that authority as encompassing:

> research (including behavioral research) and development activities appropriate to develop, modify, test, and evaluate a system, procedure, facility, or device to protect passengers and property against acts of criminal violence, aircraft piracy, and terrorism and to ensure security.

That authority includes the power to designate information generated in the course of such research and development as SSI, which can then be kept withheld from the public. Specifically, the statute provides:

> [T]he Secretary of Transportation shall prescribe regulations prohibiting disclosure of information obtained or developed in ensuring security under this title if the Secretary of Transportation decides disclosing the information would–
>
> (A) be an unwarranted invasion of personal privacy;
>
> (B) reveal a trade secret or privileged or confidential commercial or financial information; or
>
> (C) be detrimental to transportation safety.[44]

The statute goes on to clarify that information may not be withheld under a pretext of SSI when it is actually being withheld to "prevent embarrassment to a person, organization, or agency."[45]

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[40] *See* Joshua Shneyer, *Dozens of Trains Haul Volatile Bakken Oil to NY Weekly: Railroads*, REUTERS, (Jul. 15, 2014). *available at* http://www.reuters.com/article/2014/07/15/us-oil-trains-new-york-idUSKBN0FK2NR20140715.
[41] *Id.; see also* Scott Fallon, *Trains Carrying Highly Explosive Bakken Oil Coming Into N.J. By The Dozens Every Week*, NORTHJERSEY.COM (Aug. 12, 2014), *available at* http://www.northjersey.com/news/trains-carrying-highly-explosive-bakken-oil-coming-into-n-j-by-the-dozens-every-week-1.1066053
[42] S*ee also* 69 Fed. Reg. 28,068.
[43] Aviation and Transportation Security Act, Pub. L. 107-71; 69 Fed. Reg. 28,068; Homeland Security Act, Pub. L. 107-296, codified at 49 U.S.C. § 40119 (granting authority to Secretary of Transportation and Transportation Security Administration); *see also* 49 U.S.C. §114(r).
[44] 49 U.S.C. § 40119(b)(1).
[45] 49 U.S.C. § 40119(b)(3)(B).

Pursuant to this authority, the Department of Transportation promulgated regulations jointly with the Transportation Security Administration in May 2004.[46] The joint regulations repeat the statutory description of SSI and contain a list of 16 categories of information that could be designated as SSI. The sixteen categories include security training materials, security directives, vulnerability assessments, threat information, systems security information, and aviation and maritime infrastructure asset information.[47]

DOT appropriately determined that the SERC notifications are ineligible for designation as SSI. The SERC notifications fall outside the statutory and regulatory SSI parameters because the notifications and their contents were neither developed nor obtained by DOT in the course of security research and development programs. Both the underlying statutes and the implementing regulations limit SSI to information "obtained or developed" in carrying out research and development related to transportation security. DOT clearly did not develop the information contained in the notifications; the railroads did. And as currently structured in the Emergency Order, DOT has not obtained the notifications. The railroads are required to submit the notifications to state emergency response agencies. While the railroads must provide the notifications to the Federal Railroad Administration upon request, Emergency Order at 3, the submissions are not made to DOT as a matter of course. Even if they were submitted directly to DOT, as we urge the final rule to require, however, the notifications would remain outside the purview of the SSI secrecy authority because the information they contain was not developed as part of DOT security research and development programs.

2. The SERC notifications cannot be kept secret as confidential business information.

Nor do the SERC notifications contain information that can be kept secret as confidential business information.[48] The linchpin of such a basis for withholding is that the information must be confidential and its disclosure would cause the business entity competitive harm.[49] The SERC notifications contain two types of information: (1) basic emergency response information; and (2) the routes of trains carrying huge quantities of explosive crude.

As to the emergency preparedness information, there is absolutely no basis for claiming the basic emergency response information is confidential or that its disclosure would cause any competitive harm. The notifications must disclose the technical name of the hazardous cargo, immediate hazards posed to health, risks of fire or explosion, and immediate measures for handling spills or fire, and preliminary first aid measures. Emergency Order at 2, 15 (requiring disclosure of information specified in 49 C.F.R. §

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[46] *See* 69 Fed. Reg. 28,069.

[47] 49 C.F.R. § 15.5(a)(Department of Transportation regulations); 49 C.F.R. § 1520.5(a) (Transportation Security Administration regulations). The 16 categories are: (1)security programs and contingency plans; (2) TSA directives regarding security; (3) information circulars (notices issued by DOT regarding threats to transportation); (4) performance specifications; (5) vulnerability assessments; (6) security inspection or investigative information; (7) threat information; (8) security measures; (9) security screening information; (10) security training materials; (11) Identifying information of certain transportation security personnel; (12) critical aviation or maritime infrastructure asset information; (13) systems security information; (14) confidential business information; (15) research and development; and (16) other information the Department determines is SSI. 49 C.F.R. § 15.5(b).

[48] Using the federal FOIA standard to illustrate this point, FOIA's exemption 4 "permits an agency to withhold "commercial or financial information [that was] obtained from a person [and is] privileged or confidential." 5 U.S.C. § 552(b)(4); *see also* Pub. Citizen Health Research Grp. v. Food & Drug Admin., 185 F.3d 898, 903 (D.C. Cir. 1999).

[49] *See e.g., Niagara Mohawk Power Corp. v. U.S. Dep't of Energy*, 169 F.3d 16, 19 (D.C. Cir. 1999); *see also Inner City Press/Cmty. on the Move v. Bd. of Governors of Fed. Reserve Sys.*, 463 F.3d 239, 244 (2d Cir. 2006).

172.602). Much of this information in contained in Material Safety Data Sheets, which are in the public domain. To illustrate the nature of the information, a BNSF disclosure pursuant to the Emergency Order reveals that that the proper treatment when crude oil irritates the eyes is to "immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids apart in order to rinse entire surface of eye and lids with water."[50] The disclosures also describe appropriate protective clothing, such as rubber boots, which could let people who live near the tracks know they should have a pair of rubber boots in their disaster kits.

As to the train route information, the number and frequency of trains laden with huge quantities of Bakken crude (or other crude or ethanol) is not confidential business information both because it is hardly a secret and the railroads would be unable to demonstrate that its disclosure would cause them competitive harm. Trains must literally follow the tracks. Any competitor can easily see the routes the trains follow and knows which company owns each rail line. Competitors can also tell whether a train consists of rail cars that carry hazardous flammable liquids. The DOT-111 and CPC-1232 tank cars, for example, have signature features that can readily be observed as a train passes by. Unit trains, which have emerged in recent years to carry crude oil or ethanol, are visible for miles. Again, competitors can discern merely from observing a passing train that it is carrying crude oil or ethanol. Competitors are also privy to industry trends, which document the surge in crude-by-rail and ethanol shipments and which identify the Bakken formation as a key source of the crude oil dominating the rails. Competitors could also readily figure out that unit trains that begin their journey in North Dakota and move toward refineries are carrying Bakken crude.

Given the clear public interest in obtaining the basic safety information and the lack of competitive harm from disclosure, most of the states have appropriately determined that the SERC notifications may not be kept from the public as confidential business information.

3. DOT should require submission of the notifications to DOT and should make the information easily accessible to the public.

We urge DOT to require the railroads to submit their notifications to DOT, which would lessen the burdens on states to facilitate public access, subject the notifications to uniform public access standards, and enable DOT to fulfill its obligations to make regularly sought information easily accessible to the public.

By setting up a system in which the railroads sent their notifications to each state, DOT imposed burdens on the states to process public records requests, which entailed making exemption determinations and setting up mechanisms for public access. As the proposed rule acknowledges, Congress has counseled federal agencies to avoid imposing unfunded mandates on states and local governments, and DOT has addressed this obligation in the proposed rule. *See* 79 Fed. Reg. at 45,068.

The state notification approach made the notifications subject to different public access standards depending on the laws of each state. As discussed above, some states reportedly entered into nondisclosure agreements with the railroads, while others released the SERC notifications available under the state public records laws. Some states posted the entirety of the SERC notifications on a state-agency website.[51] Such a patchwork of public access to Bakken train routes makes no sense. It is hard to imagine what public policy would be served by allowing the public to know the contents of a unit train up to the border of a state and then stop again until the train enters the next state that embraces public

[50] BNSF Notification to Emergency Management Division, Response Section of the Washington State Military Department (June 6, 2004).

[51] *See Oregon State Police - Oregon Office of State Fire Marshal,* OREGON.GOV available at http://www.oregon.gov/osp/SFM/Pages/SERC/CrudeOilReports.aspx (last visited Sept. 5, 2014).

disclosure. The risks to the public are comparable. The need for emergency preparedness and self-help on the part of communities along the tracks is no different.

To put an end to the burdens imposed on the states and a patchwork system of public disclosure, we urge DOT to require the railroads to submit their notifications directly to DOT in addition to the SERCs. Since the federal Freedom of Information Act ("FOIA") applies to records in the possession of federal agencies, the notifications would then be subject to public disclosure under one uniform standard throughout the country. For the reasons laid out above, the notifications fall within no FOIA exemption to disclosure and therefore would need to be made available to the public.

Federalizing public access to the train routes and basic emergency preparedness information is consistent with how rail safety and the transportation of hazardous materials by rail are regulated. Both are the purview of the federal government with pervasive preemption of state and local authority. It makes sense, in light of such a pervasive federal role and the fact that crude-by-rail safety has created a national (indeed international) safety crisis, to have uniform public disclosure of train route and emergency response information.

In addition, federalizing public access to the notifications would trigger the Electronic Freedom of Information Act Amendments of 1996 (Electronic FOIA), which require that federal agencies affirmatively facilitate public access to information that is likely to be requested frequently under FOIA. Given the tremendous public concern about rail safety in the wake of the spate of horrific rail disasters, it is certain that news media and the public will repeatedly seek access to the notifications. In fact, the states received numerous public records act requests from the news media, community groups, and environmental and safety advocacy organizations when the first notifications were submitted to the states.

One of the driving policy considerations of the Electronic FOIA mandate is to "maximize the usefulness of agency records and information collected, maintained, used, retained, and disseminated by the Federal Government." President Obama has echoed this policy with his 2013 executive order directing the federal government to be open and accessible:

> To promote continued job growth, Government efficiency, and the social good that can be gained from opening Government data to the public, the default state of new and modernized Government information resources shall be open and machine readable. Government information shall be managed as an asset throughout its life cycle to promote interoperability and openness, and, wherever possible and legally permissible, to ensure that data are released to the public in ways that make the data easy to find, accessible, and usable.

Executive Order 13,642 (May 9, 2013).

Anticipating that requiring submission of the notifications to DOT would trigger the Electronic FOIA, DOT could affirmatively provide in the final rule that the notifications should be made in a form that would facilitate immediate posting on DOT's website. It is instructive to look at how some states have handled repeat state public records requests as a railroad's weekly train schedules and cargo has changed. For example, the State of Oregon posts the notifications on a government website, featuring the latest disclosures.[52] Requiring e-filing and immediate posting of the notifications would give the public access to the latest data as soon as it is available, instead of necessitating the filing of repeat FOIA requests and postponing disclosure until the process of fulfilling that request runs its course.

[52] *See Oregon State Police - Oregon Office of State Fire Marshal,* OREGON.GOV available at http://www.oregon.gov/osp/SFM/Pages/SERC/CrudeOilReports.aspx (last visited Sept. 5, 2014).

Making this information available on the federal agency's website would also ensure the public can obtain the most up-to-date data. Streamlining the process in this manner and affirmatively invoking Electronic FOIA would also spare the state agencies the burdens of processing repeat public records requests and designing their own disclosure systems. In keeping with federal mandates to lessen compliance burdens imposed on state governments, DOT should take on these burdens and design a system that would minimize burdens on states and maximize public access to safety information before the crude-by-rail trains have passed through communities. We urge the Department to make the information public for the entire country under the federal FOIA standards.

XII. DOT SHOULD CONSIDER AND IMPOSE FINANCIAL ASSURANCE REQUIREMENTS ON ALL SHIPPERS AND RAILROADS CARRYING HAZARDOUS CARGOES.

As described previously, there is currently no requirement that either shippers or railroads involved with the transportation of hazardous crude oil be financially capable of addressing the costs of accidents, which include environmental cleanup as well as liabilities for personal injury, wrongful death, and property damage. In Lac Mégantic, for example, the financially troubled railroad responsible for the incident (MM&A) carried only $25 million in insurance and declared bankruptcy after the disaster in the face of its extensive liabilities. Such an omission needs to be addressed, and this rulemaking affords an appropriate opportunity to do so, even though no proposal was included in the draft rule.

DOT has explicit authority under the Hazardous Materials Transportation Act ("HMTA") to issue regulations for the safe transportation of hazardous materials like crude oil via rail. 49 U.S.C. § 5103(b). Additional authority under the Federal Railroad Safety Act ("FRSA") authorizes the Secretary to issue regulations "for every area of railroad safety supplementing laws and regulations in effect" when the FRSA became effective in 1970. 49 U.S.C. § 20103(a). The FRSA provides a safety net as it extends to all areas of railroad safety, even those also covered by another statute, like HMTA. 49 C.F.R. Pt. 209, App. A at 7-9. Finally, DOT has authority to issue regulations that address both prevention of oil spills from railroad transportation as well as adequate cleanup and response, and has released an announcement of proposed rulemaking on this subject as well. DOT ANPR Docket 2014-0105 (HM-251B).

In light of the extraordinary hazards of shipping volatile crude oil via train, this suite of regulations should include requirements that shippers and railroads carry sufficient financial assurances, including but not necessarily limited to insurance, that will ensure they are be able to respond to accidents involving oil train accidents. No such standards are imposed today—insurance is today purely a commercial decision left to companies involved in transportation of dangerous products. That must change: as the draft rule recognizes, accidents are inevitable, and particularly so during the dangerously slow partial phase out of legacy DOT-111s discussed above. Indeed, the need for financial assurances is particularly acute in light of DOT's willingness to allow dangerous DOT 111s to remain in hazardous shipping service into the future.

Financial assurance requirements help ensure that responsible parties—rather than the public—pay for the costs of cleaning up releases of pollution and hazardous substances. Perhaps more importantly, they help play a key role in preventing hazardous substance releases and other accidents from happening in the first place, as third-party insurers provide oversight, incentives and standards to reduce the likelihood of

accidents. For example, robust financial assurance requirements would have done much to prevent the financially troubled MM&A, with its history of radical cost-cutting and inadequate maintenance of infrastructure, from being able to move explosive materials in dangerous DOT-111 tank cars.

As stated by Congress when it adopted statutory financial assurances requirements as part of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9608(b):

> [A] major goal of the financial responsibility requirements is to enlist insurers to provide additional policing and incentives to monitor the behavior of their insureds. . . It is often policy terms and conditions, as well as inspection and rate-making, that form the basis of the insurer's ability to influence the insured to act carefully and responsibly.

Senate Report 99-11, at 47 (1985). EPA has similarly concluded that financial assurances play a critical preventative role by creating incentives for the proper handling of hazardous substances, declaring that financial assurance requirements "protect public health and the environment by promoting the proper and safe handling of hazardous materials." U.S. EPA, *Compliance and Enforcement National Priority: Financial Responsibility Under Environmental Laws*, at 1 (2005).[53] EPA has also observed that "[f]inancial assurance…plays a significant role in reducing risks to human health and the environment because it provides a financial incentive for operators to improve environmental practices" U.S. EPA, *Region 10 Mining Financial Assurance Strategy*, at 2 (Jan. 16, 2009).[54]

It is well established that inadequate financial assurances trigger funding shortfalls, which in turn reduce the effectiveness of cleanups, leaving the public exposed to higher levels of hazardous substances. EPA's Office of Inspector General found that in fiscal year 2003, a $174.9 million funding shortfall "prevented EPA from beginning construction at all sites or providing additional funds needed to address sites in a manner believed necessary by regional officials." EPA Office of Inspector General, Congressional Request for Funding Needs on Non-federal Superfund Sites, #2004-P-0001 (Jan. 7, 2004).[55] The report identified 29 specific sites where cleanup work was delayed or scaled back in ways harmful to human health and the environment because of funding shortfalls. For example, "[t]he impact of reduced funds for the Bunker Hill site [in Northern Idaho and Eastern Washington] is associated with risk to human health, particularly for young children and pregnant women, from lead contamination in a residential area." *Id*. at 8. As one federal government report found:

> When funding is not sufficient, construction at [hazardous waste] sites cannot begin; cleanups are performed in less than an optimal manner; and/or activities are stretched over longer periods of time. As a result, total project costs may increase and actions needed to fully address the human health and environmental risk posed by the contaminants are delayed.

Id. at 4; *see also* Sierra Club v. Johnson, 2009 WL 482248 (N.D. Cal. 2009), at * 6 ("By not promulgating financial assurance requirements, EPA has allowed companies that otherwise might not have been able to

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[53] http://www.epa.gov/compliance/resources/publications/data/planning/priorities/fy2008priorityfinancial.pdf

[54] http://yosemite.epa.gov/R10/ECOCOMM.NSF/b8b7c39a103a235088256c3e007a4dd9/74d70c3512661df988257402006d039a/$FILE/R10%20Mining%20Financial%20Assurance%20Strategy.pdf

[55] http://www.epa.gov/oig/reports/2004/20040107-2004-p-00001.pdf

operate and produce hazardous waste to potentially shift the responsibility for cleaning up hazardous waste to taxpayers.") (emphasis added)

Financial assurances rules are commonplace in many industries already. For example, EPA has exercised its authority under CERCLA to begin regulating financial assurances for hard rock mines and several other industries, finding that the absence of such regulations allows companies to escape their liabilities and increase the risks to the environment and the public. See Identification of Priority Classes of Facilities for Development of CERCLA Section 108(b) Financial Responsibility Requirements, 74 Fed. Reg. 37,213 (July 28, 2009); Identification of Additional Classes of Facilities for Development of Financial Responsibility Requirements Under CERCLA Section 108(b), 75 Fed. Reg. 816 (Jan. 6, 2010).

Similarly, Canada is going through a process to evaluate whether railroads and shippers need greater oversight with respect to their ability to pay for the consequences of serious accidents involving oil and other hazardous materials, a question that took on great urgency after the bankruptcy of MM&A line involved in the Lac Mégantic disaster. In a comment letter on the proposal, Canadian Pacific observed: "After the Lac Mégantic incident it would seem that there should be minimum insurance requirements imposed on both the shipper and the carrier of hazardous commodities." *See* Letter from Paul Guthrie to Canada Transportation Agency (Jan. 21, 2014).

The railroads—which appear to have little choice whether to accept legally permitted hazardous shipments and the liabilities that come along with them—have tried without success to address some of these concerns. For example, the Surface Transportation Board rejected a tariff provision that would have required shippers of certain hazardous substances to indemnify the railroad for liabilities associated with accidents. See STB, 42820 EB (April 30, 2013), Docket No. FD 35504. Similarly, Norfolk Southern Railroad withdrew a requirement that shippers protect the railroad from damages from inadequate rail cars after shippers complained. *See* Laura Stevens, Norfolk Southern Withdraws Tank-Car Legal-Protection Rule, Wall Street Journal (June 27, 2014).

In short, the record reveals a pressing need for DOT to investigate and impose standards to ensure that entities involved in shipping hazardous commodities like crude oil are financially able to clean up the environmental damages attendant to accidents and face liabilities for other harms. This is not only a matter of basic fairness to affected communities and individuals, but the record is clear that such requirements will help ensure that railroads and shippers are exercising the highest possible degree of care and oversight to prevent accidents. This need is particularly acute in light of DOT's proposed long phase out times and willingness to allow DOT-111s and other noncompliant tank cars to remain in service permanently for some transport.

XIII. CONCLUSION

This rulemaking marks a moment in history that will impact millions of Americans who currently live in fear of the trains that move through their communities. It is a moment that calls for federal regulators to step in to protect the public in the face of extreme hazards and market failures that make private sector illusive and marked with delay. As NTSB Chair Deborah A.P. Hersman remarked last April: "There is a very high risk here that hasn't been addressed. They aren't moving fast enough. We don't need a higher body count before they move forward. That is a tombstone mentality. We know the steps that will

prevent or mitigate these accidents. What is missing is the will to require people to do so."[56] We urge PHMSA to move quickly to adopt the strongest safety standards and to put them into place expeditiously.

[56] Joan Lowy, *NTSB Chief Says Obama Administration Needs to Act Immediately on Oil Train Safety*, U.S. News & World Report, Apr. 23, 2014 (Exhibit 54) (http://www.usnews.com/news/ politics/articles/2014/04/23/ntsb-head-action-needed-now-on-oil-train-safety).