Attorneys General of Maryland, New York, California, Delaware, Illinois, Massachusetts, Michigan, Minnesota, New Jersey, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont, Washington, and the District of Columbia

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January 13, 2020

Drue Pearce
Deputy Administrator
Pipeline and Hazardous Material Safety Administration
U.S. Department of Transportation, East Building PHH-30
1200 New Jersey Avenue, SE
Washington, DC 20590

Re: Notice of Proposed Rulemaking – Hazardous Materials: Liquefied Natural Gas by Rail, Docket No. PHMSA-2018-0025 (HM-264)

Dear Deputy Administrator Pearce:

The Attorneys General of Maryland, New York California, Delaware, Illinois, Massachusetts, Michigan, Minnesota, New Jersey, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont, Washington, and the District of Columbia (States), submit these comments to voice their strong objection to the Pipeline and Hazardous Materials Safety Administration's (PHMSA) notice of proposed rulemaking that would allow for the bulk transport of refrigerated liquid methane, more commonly known as liquefied natural gas (LNG) nationwide by rail in DOT-113C120W tank cars (Proposed Rule).[1] Proceeding with the Proposed Rule would put the States' residents, first responders and environmental resources at greater risk of catastrophic accidents, a dynamic which PHMSA has failed to adequately analyze just as it has failed to consider the environmental and climate impacts of allowing LNG to be shipped in rail tank cars.

The Proposed Rule would allow LNG—an extremely cold "cryogenic liquid" that is flammable and odorless—to be transported through densely populated areas, potentially in unit trains of up to 100 tank cars operated by just one person, on the same rail lines used by high speed passenger trains, with inadequate safety precautions. PHMSA's failure to take the public safety hazards posed by these conditions seriously is alarming. As emphasized by the National Transportation Safety Board (NTSB), which commented on the Proposed Rule on December 5, 2019, "the risks of catastrophic LNG releases in accidents is too great not to have operational controls in place before large blocks of tank cars and unit trains proliferate."[2]

Furthermore, while PHMSA included six operational controls in a special permit issued to Energy Transport Solutions LLC (ETS) on December 5, 2019 allowing that company to ship LNG from northern Pennsylvania to a not-yet-built export terminal in southwest New Jersey

[1] Hazardous Materials: Liquefied Natural Gas by Rail, 84 Fed. Reg. 56,964 (Oct. 24, 2019).
[2] Letter from Robert L. Sumwalt, III (Chairman) of National Transportation Safety Board (Dec. 5, 2019), https://www.regulations.gov/document?D=PHMSA-2018-0025-0078 ("NTSB Letter").

using DOT-113C120W rail tank cars – none of those precautions are included in the Proposed Rule. [3] Although the States do not believe that the operational controls ultimately included in the Special Permit are alone sufficient to protect the public from the significant safety hazards of transporting LNG by rail, PHMSA cannot justify omitting such basic safety measures from this rulemaking of broad nationwide scope.

Additionally, while PHMSA predicts that the Proposed Rule would lead to increased upstream development as well as downstream consumption of natural gas by both domestic and foreign markets the agency's Environmental Assessment fails to analyze the proposal's potential to exacerbate greenhouse gas pollution.[4] Such reasonably foreseeable effects must be included in the agency's review under the National Environmental Policy Act (NEPA) and additional public comment on that analysis must be allowed by the agency before PHMSA can finalize its proposal.

Because the agency has failed to properly analyze the public safety and environmental impacts of allowing LNG shipment via rail tank car, the States urge PHMSA to withdraw the Proposed Rule.

I. There are many hazards associated with transporting LNG.

Liquefied natural gas is comprised of 85-95% methane and trace amounts of ethane, butane, propane and nitrogen. At a molecular level it is indistinguishable from natural gas in its other phases. As an endpoint commodity it does not matter whether natural gas is liquefied or shipped via other means. However, the technical specifications of transporting and storing LNG are unique among other methods of moving the commodity to market and pose significant additional safety concerns that have not been adequately addressed in the Proposed Rule.

Liquefaction involves cooling natural gas to a temperature at or below -260°F.[5] In this liquid state, the commodity takes up roughly 1/600th of the space as it does as a gas.[6] These qualities—intense cold coupled with a compressed arrangement of molecules—pose distinct safety hazards.

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[3] PHMSA, Special Permit SP20534 to Transport LNG By Rail in DOT113C120W Rail Tank Cars (Dec. 5, 2019), https://www.regulations.gov/document?D=PHMSA-2018-0025-0074. The inclusion of operational controls in ETS' Special Permit prompted the Attorneys General of Maryland and New York to request an extension of the public comment period on the Proposed Rule on December 13, 2019. On December 23, 2019, PHMSA extended the deadline for public comments from December 23, 2019 to January 13, 2020 in a notice published in the Federal Register. *See* 84 Fed. Reg. 70,491 (Dec. 23, 2019).

[4] *See, e.g.*, AAR Petition at 2 ("Authorizing transportation of LNG by rail likely will stimulate more interest."); 84 Fed. Reg. at 56,966 (PHMSA agreeing with AAR that the proposal will "enhance domestic energy production"); Preliminary Regulatory Impact Analysis, Docket No. PHMSA-2018-0025, RIN 2137-AF40, 18 (Oct. 2019), https://www.regulations.gov/document?D=PHMSA-2018-0025-0001 (stating that the Proposed Rule would "promot[e] domestic energy production and consumption.").

[5] Proposed Rule, 84 Fed. Reg. at 56,965.

[6] *Id*.

First, because LNG only retains its liquid state at extremely cold temperatures, its release into the atmosphere is inherently hazardous.[7] In the event of a spill, LNG will quickly begin transitioning into a gaseous state.[8] This vaporization creates an extremely cold gaseous cloud, the properties of which are poorly known.[9] The extreme temperatures of both the LNG and the accompanying vapor cloud can embrittle steel and cause severe burns, further complicating the responses of emergency personnel and compromising infrastructure around the release.[10]

In a phenomenon that is difficult to predict, a vapor cloud may explode if trapped by a physical barrier.[11] Vapor clouds accompanying LNG spills tend to hug the ground as they are confined by atmospheric pressure after separating from the LNG pool. These clouds will drift downwind until they encounter a physical obstacle or slowly dissipate into the atmosphere. If the cloud becomes pinned against a physical obstacle, the pressure within the cloud will grow until either the obstacle is overcome or an explosion occurs.[12] Confinement has been observed in low lying ditches and against buildings, fences, and even the pipes above deck on container ships.[13]

Second, because such an extreme temperature is required to maintain the cargo's liquid state, even a slight deviation from cryogenic conditions can lead to its rapid vaporization.[14] This presents an extreme hazard when LNG is stored in a confined space. The compressed nature of LNG has obvious efficiency benefits when transporting large volumes of gas. But it also means that containers used to store LNG cannot physically hold the same quantity of molecules when they enter a gaseous phase. If not properly vented, vaporization within a fixed volume container can lead to a little understood phenomenon known as a Boiling Liquid Expanding Vapor Explosion.[15]

A high risk of fire accompanies LNG spills under most conditions. The vapor cloud formed as LNG is exposed to atmospheric conditions is highly flammable and can ignite in the presence of an ignition source when comprising 5-15% of the ambient air.[16] The result is a jet fire that slowly burns back to the origin pool, where it may trigger a pool fire.[17] There is no way to extinguish a pool fire and a controlled burn may be the only way of limiting its impact.[18]

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[7] *See id.* at 56,972-73 (briefly discussing the various risks from LNG release). For a more thorough discussion of the risks inherent in the release of LNG to atmospheric conditions *see* John L. Woodward & Robin Pitblado, *LNG Risk Based Safety: Modeling and Consequence Analysis* (2010).
[8] *Id.*
[9] *Id.*
[10] *Id.*
[11] *Id.* at 8 (Discussing outdoor vapor cloud explosions that can occur "under conditions of partial confinement and/or in congested regions" which includes areas with "a high density of obstacles such as piping, pumps, and other such equipment.").
[12] *Id.*
[13] *Id.*
[14] *See* John L. Woodward & Robin Pitblado, *LNG Risk Based Safety: Modeling and Consequence Analysis* (2010).
[15] This concept is briefly described in the draft EA. *See* Proposed Rule, 84 Fed. Reg. at 56,974 n.29.
[16] Proposed Rule, 84 Fed. Reg. at 56,973.
[17] *Id.*
[18] John L. Woodward & Robin Pitblado, *LNG Risk Based Safety: Modeling and Consequence Analysis* at 5-6, tbl. 1.3 (2010)

There is limited domestic experience with these hazards.[19] Liquefaction has been primarily used to transport natural gas internationally by ship or to store gas along existing pipelines as a backup supply to meet periods of high demand.[20] Neither of these processes involves transporting large quantities of LNG along domestic rail corridors. At both LNG export facilities and peak shaving storage depots, natural gas is received from existing pipelines, liquefied, and stored on site prior to either pumping into a specially designed LNG container ship or regasification and injection back into a pipeline.[21]

II. Background to the Proposed Rule

PHMSA, as the agency charged with administering the Hazardous Materials Transportation Act (HMTA), must "protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material." HMTA, 49 U.S.C. § 5101. To further these goals, PHMSA maintains a list of commodities that are authorized for transportation via rail. Only those hazardous substances appearing on the hazardous materials table, 49 CFR § 172.101 app. A, can be transported in commerce and only in line with the requirements enumerated therein, *see generally* 49 C.F.R. §§ 172, *et seq*. No agency has ever allowed the transport of LNG by rail tank car, other than by special permit.

PHMSA has also promulgated regulations allowing interested parties to petition the agency for a change in regulations. *See* 49 C.F.R. § 106.95. On February 2, 2017, the Association of American Railroads (AAR) invoked those provisions in a petition related to the Proposed Rule requesting that the agency amend the Hazardous Materials Table, 49 CFR § 102, and regulations governing the transport of cryogenic liquids, 49 C.F.R. § 173.319, to allow for the transportation of LNG in DOT-113C120W and DOT-113C140W tank cars.[22]

The Center for Biological Diversity (CBD) responded to AAR's request on May 15, 2017, with a letter urging PHMSA to deny the petition.[23] CBD emphasized that the agency must comply with the National Environmental Policy Act (NEPA), 42 U.S.C. § 4342(c), the HMTA, 29 U.S.C. § 5103, and the Administrative Procedure Act (APA), 5 U.S.C. § 553, prior to making any changes to the Hazardous Materials Regulations.[24] On May 7, 2018, PHMSA responded to

[19] Only three companies, the Florida East Coast Railway, Alaska Railroad Corp., and, most recently, Energy Transport Solutions LLC, have been granted special permits for the limited shipment of LNG by rail along specified routes.
[20] This practice, known as "peak shaving" is described in more detail in the Preliminary RIA accompanying the Proposed Rule. *See* Preliminary Regulatory Impact Analysis, Docket No. PHMSA-2018-0025, RIN 2137-AF40 (Oct. 2019), https://www.regulations.gov/document?D=PHMSA-2018-0025-0001.
[21] These facilities tend to be located away from densely populated areas. *See* Congressional Research Service, Liquefied Natural Gas (LNG) Import Terminals: Siting, Safety, and Regulation at 19 (Dec. 14, 2019), https://www.everycrsreport.com/files/20091214_RL32205_e95cb50c88dbd56a2c8f706b2d521ef7ae81ee00.pdf.
[22] *See* Association of American Railroads, Petition for Rulemaking to Allow Methane Refrigerated Liquid to be Transported in Rail Tank Cars, P-1697, https://www.regulations.gov/document?D=PHMSA-2017-0020-0002.
[23] *See* Letter from Emily Jeffers, Center for Biological Diversity, Comments to Dkt. No. PHMSA-2017-0020 (May 15, 2017), https://www.regulations.gov/document?D=PHMSA-2017-0020-0003.
[24] *Id*.

both letters with a determination that AAR's petition "merits consideration in a future rulemaking."[25]

While AAR's request was pending, the agency received a separate request from ETS for a Special Permit to allow the company to transport LNG in unit trains of 50-100 DOT-113C120W and DOT-113C140W rail cars daily.[26] Each DOT-113C120W tank car has a capacity of approximately 30,000 gallons, meaning a single unit train could transport 1.5 – 3 million gallons of LNG.[27] The specific origins and destinations of these shipments were redacted from ETS's application.[28]

PHMSA acknowledged its receipt of these documents but otherwise took no action until after the publication of Executive Order 13868: Promoting Energy Infrastructure and Economic Growth (EO) on April 10, 2019. 84 Fed. Reg. 15,495. The EO directed the Department of Transportation to propose regulations "that would . . . permit LNG to be transported in approved rail tank cars." *Id*. at 15,497. An Executive Order, however, does not override the need to comply with existing law. *Id*. at 15,499 ("This order shall be implemented consistent with applicable law and subject to the availability of appropriations."). PHMSA must comply fully with the HMTA, NEPA, and the APA when responding to AAR's petition regardless of any direction provided by the EO. *See Environmental Defense Fund, Inc. v. Massey*, 986 F.2d 528, 530 (D.C. Cir. 1993) (applying requirements of NEPA over federal agency's argument that its proposed action was "governed by [an] Executive Order, not NEPA").

PHMSA published the Proposed Rule at issue here in the Federal Register on October 24, 2019. *See* 84 Fed. Reg. 56,964 (Oct. 24, 2019). The Proposed Rule included a cursory Environmental Assessment (EA), 84 Fed. Reg. 56,970-56,975, which considered three alternatives: 1) a no action alternative continuing the prohibition on transporting LNG via rail tank car; 2) authorizing the transport of LNG in both DOT-113C120W and DOT-113C140W tank cars; and 3) allowing LNG rail transport exclusively in DOT-113C120W tanks cars. *Id*. at 56,971. PHMSA rejected the no action alternative because it would "fail to comply with [Executive Order 13868]," and rejected the use of DOT-113C140W tank cars because "[the agency] does not want to delay action on the DOT-113C120W tank car." *Id*. PHMSA ultimately selected the third option which would allow LNG to be shipped in DOT-113C120W tank cars. *Id*. The agency's EA concluded with a proposed Finding of No Significant Impact (FONSI), that "the proposed regulations allowing the transport of LNG via DOT-113C120W tank car will not result in a significant environmental impact." *Id.* at 56,975.

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[25] *See* Letter from Shane C. Kelley, Director, Standards and Rulemaking Division to Robert E. Fronczak, Asst. Vice President Environment and Hazmats, AAR (May 7, 2018), https://www.regulations.gov/document?D=PHMSA-2017-0020-0005.

[26] *See* Energy Transport Solutions (ETS) Application for a Special Permit to Transport Methane Refrigerated Liquid in DOT 113 Tank Cars (Aug. 21, 2017), https://www.regulations.gov/document?D=PHMSA-2019-0100-0941.

[27] *See* Proposed Rule, 84 Fed. Reg. at 56,966 n.a.

[28] Energy Transport Solutions (ETS) Application for a Special Permit to Transport Methane Refrigerated Liquid in DOT 113 Tank Cars (Aug. 21, 2017), https://www.regulations.gov/document?D=PHMSA-2019-0100-0941. It was later revealed that ETS's trains would operate only "between Wyalusing, PA and Gibbstown, NJ, with no intermediate stops." *See* Special Permit DOT SP20534, at 2.

Subsequent to publication of the Proposed Rule, PHMSA granted ETS's Special Permit application.[29] The Special Permit allows ETS to transport LNG by rail in DOT-113C120W tank cars between Wyalusing, Pennsylvania and Gibbstown, New Jersey and imposed a set of six operational controls that are not included in the agency's Proposed Rule.[30] The Final Environmental Assessment accompanying the Special Permit ("Special Permit EA") disclosed that the agency ultimately considered only two alternatives: a "selected action alternative" that included the six required operational controls, and a "no action alternative" contemplating that ETS would transport LNG between Wyalusing, Pennsylvania and Gibbstown, New Jersey using only motor vehicles.[31] And while the Special Permit EA states that it was prepared "in accordance with" NEPA and its implementing regulations, it failed to adequately engage in any risk modeling or projection of upstream and downstream environmental impacts.[32]

As described below, PHMSA's proposal fails to meet the requirements of both NEPA and the APA. The proposal's analysis of the safety risks posed by transporting LNG along existing freight corridors is simply insufficient. These trains will inevitably share the tracks with high speed passenger trains and travel through some of the most congested, densely populated areas in our States. Yet PHMSA failed to consider these important public safety concerns in its proposal.

Additionally, while the agency acknowledges that rail transport will allow natural gas to reach new markets, spurring both upstream development and downstream consumption, the environmental assessment is silent on the greenhouse gas impacts of such market changes. Indeed, PHMSA's discussion of greenhouse gases focuses primarily on the efficiency differences between truck and rail transportation, and the emissions involved in manufacturing additional DOT-113C120W tank cars. That is a woeful mischaracterization of the proposal's potential environmental impact, and NEPA requires more. *See Sierra Club v. FERC (Sabal Trail)*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) ("[G]reenhouse-gas emissions are an indirect effect of authorizing this project, which [the agency] could reasonably foresee, and which the agency has legal authority to mitigate.").[33]

III. The Proposed Rule vastly understates the significant safety concerns inherent in shipping LNG by rail along existing freight corridors.

In the Proposed Rule, PHMSA asserts that the DOT-113 specification rail car, which was designed 50 years ago and has a double pressure-vessel design, "is specially designed" for the

[29] While the permit itself was issued on December 5, 2019 and uploaded to www.regulations.gov on December 6, 2019, notice of its issuance was not provided to the public in the Federal Register until December 11, 2019. *See* 84 Fed. Reg. 67,768 (Dec. 11, 2019).
[30] *See* Special Permit DOT SP20534 at 2-3.
[31] *See* Final Environmental Assessment, SP 20534 Special Permit to transport LNG by rail in DOT-113C120W rail tank cars (Dec. 5, 2019), at 4-7, https://www.regulations.gov/document?D=PHMSA-2019-0100-3007.
[32] *See id*. at 1, 23-25.
[33] *Cf. Sierra Club v. U.S. Dep't of Energy*, 867 F.3d 189, 202-203 (D.C. Cir. 2017) (upholding agency's NEPA review of LNG export terminal because it "evaluated the upstream and downstream greenhouse-gas emissions… from producing, transporting, and exporting LNG in its Life Cycle Report.").

transport of cryogenic liquids.[34] 84 Fed. Reg. at 56,973. As discussed below, that may be true, but it does not follow that DOT-113 rail cars are designed to address the safety hazards of transporting LNG.[35]

Based on its own data and data provided by AAR covering a 37-year period between 1980 and 2017, PHMSA found that "there were 14 instances of damage to DOT-113 tank cars during transportation" and that most of these incidents "did not result in a loss of hazardous materials." *Id.* at 56,972. PHMSA acknowledges that releases of hazardous materials during a DOT-113 derailment "can be considerably larger than releases from a [Cargo Tank Motor Vehicle] that travels by highway" and also concedes that railroads are not required to report all incidents to PHMSA or to the Federal Railroad Administration (FRA). *Id.* Yet PHMSA concludes that the DOT-113 rail tank car has a "demonstrated safety record." *Id.* at 56,967. PHMSA also asserts in the Proposed Rule that the "hazards of transporting LNG are no different than that of flammable cryogenic liquids already authorized for bulk rail transport in accordance with the HMR." *Id.*[36]

The Proposed Rule states that PHMSA "considered" incorporating operational controls for high-hazard flammable trains (as defined in the HMR) for the transport of LNG by rail, or requiring compliance with a voluntary railroad industry protocol known as "Circular OT-55" that includes speed restrictions, track requirements, and storage requirements for any "Key Train" (defined to include at least 20 car loads of any combination of hazardous material). 84 Fed. Reg. at 56,968. However, "for this rulemaking, PHMSA and FRA decided not to propose additional operational controls" for the stated reason that "there is not sufficient data about the potential movements of LNG by tank car," i.e., "it is uncertain . . . whether LNG by rail will shift to be transported using a unit train model of service, and if so, how quickly that shift will occur." *Id.* at 56,969. However, the agency's assertion that "the railroad industry's voluntary adoption of [Circular OT-55] is an important consideration for PHMSA in assessing what operational controls are necessary" is betrayed by comments of AAR and the American Short Line and Regional Railroad Association on the Proposed Rule which clearly state their opposition to heightened safety measures including restrictions on braking and routing, train length, train composition, and even train speed when it comes to the proposed transportation of LNG by rail.[37]

The States are concerned that PHMSA's safety assessment is based on untested assumptions, downplays or overlooks major risks, and cannot be reconciled with the agency's

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[34] PHMSA refers to the DOT-113 class of rail tank car described under 49 C.F.R. § 179.400 *et seq*. The DOT-113C120W rail car specification that PHMSA proposes as an appropriate packaging for LNG transport is a sub-specification of the DOT-113 class of rail tank car that is used for transport of cryogenic liquids. *See* 49 C.F.R. §§ 173.319, 179.401.1.

[35] NTSB Letter at 3.

[36] The HMR refers to the Hazardous Materials Regulations, 49 C.F.R. parts 171-180.

[37] *See* Comment submitted by Robert E. Fronczak, P.E., Assistant VP, Association of American Railroads and JR Gelnar, VP, American Short Line and Regional Railroad Association (Dec. 19, 2019), at 3-5 https://www.regulations.gov/document?D=PHMSA-2018-0025-0112 ("AAR Letter"). The railroad industry agrees with PHMSA's assessment that "there is insufficient data about movements of LNG by tank car" but somehow sees the absence of a relevant and statistically significant safety record as a reason *not* "to propose more restrictive requirements at this time." *Id.* at 5 (citing Proposed Rule, 84 Fed. Reg. at 56,969).

own decision to impose six operational controls on a Special Permit for LNG by rail issued six weeks after releasing the Proposed Rule—in violation of the requirements of NEPA and the APA.[38]

A. The National Transportation Safety Board has stressed the need for a thorough safety assessment of DOT-113 rail tank cars and has urged PHMSA to implement operational controls that apply to High-Hazard Flammable Trains, given the risk of catastrophic accidents.

The National Transportation Safety Board (NTSB) is an independent federal agency that investigates and reports on transportation accidents, including rail accidents and those involving the release of hazardous materials.[39] The NTSB also promotes transportation safety by issuing recommendations to various agencies and stakeholders. An NTSB document from December 2017 states that of the more than 14,600 safety recommendations it has issued, over 82% of its recommendations have been implemented.[40]

On December 5, 2019, the NTSB commented on the Proposed Rule, urging PHMSA and FRA to consider NTSB's comments "before authorizing LNG rail shipment in DOT-113 tank cars."[41] NTSB points out that "unit trains of DOT-113 tank cars carrying large volumes of flammable cryogenic gases have no operational or accident performance safety history" and therefore a "thorough safety assessment is needed."[42] NTSB goes on to emphasize that there is no data in the docket for the Proposed Rule, nor in the related special permit docket, that "provide[s] a crashworthiness assessment for the DOT-113 tank car design and, in particular, the specification DOT-113C120W tank car which PHMSA proposes to authorize for LNG transportation."[43]

NTSB cites a rail industry database indicating that there are currently only 67 rail tank cars in the North American railcar fleet fitting the DOT-113C120W specification that PHMSA proposes to authorize for LNG transportation.[44] NTSB also points out that ethylene (a cryogenic liquid) is the only hazardous material that must currently be transported in the DOT-113C120W package, but that ethylene is not listed in the rail industry's "Top 125 hazardous materials transported by rail."[45] Thus, NTSB submits that "relying on data for the accident history of similar hazardous materials transported in the small fleet of DOT-113 tank cars . . . or making engineering assumptions based on the performance of pressure tank cars with completely

[38] The States do not suggest that these permit conditions are alone sufficient to protect against the significant risk to public safety from transporting millions of gallons of LNG along existing freight lines, but believe a thorough discussion of safety alternatives is required and should not be dismissed off hand because of a lack of "sufficient data." Notably, the conditions included in the Special Permit do not impose any restrictions on train length, speed, or routing through populated areas. *See* Special Permit DOT SP20534, at 2-3.
[39] About the National Transportation Safety Board, https://www.ntsb.gov/about/Pages/default.aspx (last visited Jan. 13, 2020).
[40] NTSB FY2018-2022 Strategic Plan at 8 (December 2017), https://www.ntsb.gov/about/reports/Documents/FY2018-2022strategicPlan.pdf.
[41] NTSB Letter at 3.
[42] *Id.*
[43] *Id.*
[44] *Id.*
[45] *Id.*

different features and operating parameters . . . does not provide a statistically significant or valid safety assessment and calls into question how PHMSA determined the specification DOT-113C120W tank car is an acceptable package to transport LNG."[46]

The NTSB letter then notes their pointed disagreement "with PHMSA's assertion that the number of LNG shipments would be minimal and that proposing additional operational controls in this [Proposed Rule] is unnecessary."[47] NTSB aptly points out that "this rulemaking implies a greatly increased fleet size [of DOT-113C120W classification rail tank cars] if its stated purpose is enhancing energy growth in the United States."[48] As NTSB also notes, ETS's Special Permit application anticipates "operating two LNG unit trains, 50 to 100 tank cars, per day."[49] This leads to the entirely logical inference that broadly authorizing LNG to be transported by rail could lead to the proliferation of 50-car or 100-car LNG unit trains. In light of the potential for such a significant development, NTSB "strongly suggests that PHMSA use this rulemaking opportunity to implement operational controls similar to the protections currently in place for high-hazard flammable trains," which are subject to special restrictions in the HMR.[50]

NTSB goes on to suggest that PHMSA should include at least the following operational controls as part of this rulemaking:

- Routing. The "additional safety and security planning requirements" prescribed under 49 C.F.R. § 172.820 of the HMR for, *inter alia*, "high-hazard flammable trains," should be required for LNG transport by rail.[51] For example, under these special regulations, a rail carrier must analyze the "safety and security risks present . . . for the route and railroad facilities along the route . . . including, but not limited to, classification and switching yards, storage facilities, and non-private sidings."[52] As part of such analysis, the rail carrier must conduct "alternative route analysis" that compares "the safety and security risks of the alternative(s) to the primary rail transportation route, including the risk of a catastrophic release from a shipment traveling along each route . . . [and a]ny remediation or mitigation measures implemented on the primary or alternative routes" as well as "[p]otential economic effects of using the alternative route(s)."[53] These additional regulations require a rail carrier to "seek relevant information from state, local, and tribal officials, as appropriate, regarding security risks to high-consequence targets along or in proximity" to both primary and alternative routes.[54]

[46] *Id.*
[47] *Id.* at 4.
[48] *Id.*
[49] *Id.;* ETS Special Permit Application at 6-7.
[50] *Id. See* 49 C.F.R. § 174.310. A "high-hazard flammable train" is defined in the HMR as "a single train transporting 20 or more loaded tank cars of a Class 3 flammable liquid in a continuous block or a single train carrying 35 or more loaded tank cars of a Class 3 flammable liquid throughout the train consist." 49 C.F.R. § 171.8.
[51] NTSB Letter at 5.
[52] 49 C.F.R. § 172.820(c)(1).
[53] 49 C.F.R. § 172.820(d).
[54] 49 C.F.R. § 172.820(c)(2), (d)(2).

- Speed restrictions. Trains carrying LNG through "high-threat urban areas" must be limited to a maximum speed of 40 mph, and a 50 mph speed limit should apply to all trains "transporting large blocks of LNG tank cars."[55] A "high-threat urban area" is defined in the federal Rail Transportation Security regulations (49 C.F.R. Part 1580 *et seq.*) as "an area comprising one or more cities and surrounding areas including a 10-mile buffer zone."[56] The following 19 metropolitan areas within the respective States are "high-threat urban areas" according to an Appendix annexed to those regulations: Anaheim/Santa Ana Area (CA), Bay Area (CA), Los Angeles/Long Beach Area (CA), Sacramento Area (CA), San Diego Area (CA), National Capital Region (DC), Boston Area (MA), Chicago Area (IL), Baltimore Area (MD), Detroit Area (MI), Twin Cities Area (MN), Jersey City/Newark Area (NJ), Charlotte Area (NC), Buffalo Area (NY), New York City Area (NY), Portland Area (OR), Philadelphia Area (PA), Pittsburgh Area (PA), and the Seattle Area (WA).[57]

- Braking. NTSB states that a train transporting LNG "should be equipped and operated with either electronically controlled pneumatic brakes (ECP), a two-way end-of-train (EOT) device as defined in 49 C.F.R. § 232.5, or a distributed power (DP) system as defined in 49 C.F.R. § 229.5."[58]

- Train crew separation distance. NTSB stresses that "[c]rew separation from potential sources of LNG release is particularly necessary since the product is not odorized, potentially leaving train crews unaware of leaks and hazardous flammable gas accumulations." Accordingly, NTSB urges PHMSA to implement safety recommendations it has already issued following a December 30, 2013 collision of two freight trains in North Dakota. These recommendations include a new requirement that "all trains have a minimum of five nonplacarded cars between any locomotive or occupied equipment and the nearest placarded car transporting hazardous materials, regardless of train length or consist."[59] A "placarded car" refers to a rail car that is identified with signage as containing hazardous materials.[60] The official collective bargaining representative under the Railway Labor Act for locomotive engineers and other operating employees on freight trains has expressed serious concerns about the need for adequate separation distance from hazardous substances like LNG.[61]

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[55] NTSB Letter at 5.
[56] *See* 49 C.F.R. § 1580.3
[57] *See* Appendix A to 49 C.F.R. Part 1580, https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=29498b268be4458c841a90352e260392&mc=true&n=pt49.9.1580&r=PART&ty=HTML#ap49.9.1580.0000_0nbspnbspnbsp.a. The Appendix to the States' letter contains maps of active rail lines within the States, which illustrate the extent to which freight rail lines pass through or near heavily populated areas within the States.
[58] NTSB Letter at 5.
[59] *Id.* at 5-6.
[60] *See generally* 49 C.F.R. § 172.504. NTSB has also suggested that PHMSA and FRA revise 49 C.F.R. § 174.85 to ensure the protection of train crews through adequate separation distance between locomotives and hazardous materials cars. *See* NTSB Letter at 5.
[61] Letter from Brotherhood of Locomotive Engineers and Trainmen, (Dec. 23, 2019), at 2, https://www.regulations.gov/document?D=PHMSA-2018-0025-0172.

Given the absence of any such operational controls from the Proposed Rule, NTSB concluded "that it would be detrimental to public safety if PHMSA were to authorize the transportation of LNG by rail with unvalidated tank cars and lacking operational controls that are afforded other hazardous materials such as flammable liquids, as currently proposed."[62] The States agree with NTSB that, at a minimum, the operational controls described above should be incorporated into any rulemaking authorizing the shipment of LNG by rail.

B. Neither PHMSA nor the Federal Railroad Administration has completed safety testing of LNG transport and DOT-113 tank cars.

PHMSA's Preliminary RIA suggests that some PHMSA studies were thought to be "potentially relevant and beneficial to the safety analysis of LNG by rail as a hazardous liquid commodity," but when the agency "evaluated the completed research projects in the context of this proposed rule" it "found them to be either not directly applicable to the economic analysis or of limited relevance to the specific issue of transporting LNG by rail."[63]

One PHMSA-funded study, referenced only in a footnote within the Preliminary RIA, titled "Risk Assessment of Surface Transport of Bulk Quantities of Liquefied Natural Gas" and dated March 20, 2019, was prepared for PHMSA by Cambridge Systematics, Inc. It concludes:

> Developing a [Quantitative Risk Assessment] with risk factors and parameters is the first step to modeling LNG transport by motor carrier and by rail. This will help to evaluate the derailment and release probability of LNG rail cars over certain segments of the network and to account for a variety of track and train characteristics. . . When the probability of LNG tank car derailment is understood, better decisions can be made regarding the crashworthiness, placement, and operation of rail cars and the potential consequences from an LNG release due to a derailment.[64]

The agency published the Proposed Rule without being able to point to any such completed PHMSA or FRA Quantitative Risk Assessment, which was described by its own consultant nearly a year ago as the "first step" to rigorously evaluating the safety prospects of LNG transport by rail.[65]

The FRA stated in a March 2016 letter to Florida East Coast Railway (FEC), in connection with FEC's request to transport LNG in intermodal portable tanks rather than DOT-113C120W classification rail tank cars, that "any release of LNG in a non-controlled

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[62] NTSB Letter at 6.
[63] Preliminary RIA at 12.
[64] "Final Report: Risk Assessment of Surface Transport of Bulk Quantities of Liquefied Natural Gas" (Mar. 20, 2019), https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/research-and-development/hazmat/reports/71651/fr2-phmsa-hmtrns16-oncall-20mar2019-v3.pdf.
[65] Apparently, Cambridge Systematics, Inc. was either not aware of a "Quantitative Risk Assessment" dated October 2017 by Exponent, Inc. that was submitted to PHMSA on behalf of ETS in support of its application for a special permit, or did not consider it to be sufficiently robust to consider in its analysis. *See* https://www.regulations.gov/document?D=PHMSA-2019-0100-0940.

environment is dangerous, but the transportation of large quantities of LNG in a single train presents unique safety risks."[66] FRA went on to state in the letter as follows:

> …the unique challenges posed by the rail transportation of LNG require us to ensure that we are doing everything we can to keep railroad employees and communities along the proposed routes safe. FEC's proposed LNG transportation routes traverse congested, highly populated areas, with frequent highway-rail grade crossings. Any LNG transported along the proposed routes would eventually share the routes with high-performance passenger trains operating at speeds of up to 110 mph. The complexity of this operating environment requires FRA to conduct a thorough evaluation of FEC's proposal to ensure public safety.[67]

The Preliminary RIA goes on to disclose that the FRA is in the midst of several safety tests that are potentially relevant to the Proposed Rule: (1) a "full-scale pool fire test of [an] LNG filled ISO tank" that FRA plans to conduct before the first quarter of FY2020; (2) a full-scale tank car impact testing and analysis of two DOT-113 tanks to assess their "performance and crashworthiness," expected to conclude in May 2020; (3) an LNG tender crashworthiness assessment," expected to be concluded in December 2020; (4) a full-scale LNG tender rail highway crossing impact test" to "evaluate the survivability of valves and valve housing on an LNG tender" in a rail crash crossing incident, also expected to be concluded in December 2020; and (5) a project "evaluating risk assessment of unit trains versus regular merchandize trains transporting hazardous materials, including LNG" that commenced in fall 2019.[68]

The States are concerned that PHMSA is rushing ahead with the Proposed Rule without awaiting the results of these safety examinations by FRA, an agency with which PHMSA is required to coordinate in HMR rulemaking. According to FRA, many of these safety research projects will not be completed for another year. PHMSA should not act until it has the full benefit of those studies and the public is allowed to comment on those reports.[69]

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[66] Federal Railways Administration Letter to Florida East Coast Railway (Mar. 3, 2016) at 1, available at Ex. D within https://www.regulations.gov/document?D=PHMSA-2019-0100-2763.

[67] *Id.* at 2.

[68] Preliminary RIA at 13. The need for a thorough risk assessment has been heightened by the FRA's withdrawal of other, more general, safety requirements. In mid-2019, for example, FRA decided to withdraw a rule proposed in 2016 that would have required freight trains, with limited exceptions, to be operated by at least two crewmembers. The two crewmember requirement arose out of FRA's concern that railroads might reduce the number of crewmembers without first "considering safety risks or implementing mitigating actions that FRA believes are necessary." *Compare* 81 Fed. Reg. 13, 918, 13, 919 (Mar. 15, 2016) (proposing rule requiring operation by at least two crewmembers) *with* 84 Fed. Reg. 24, 735, 24, 736 (May 29, 2019) (withdrawing proposed rule based on purported conclusion that that minimum crew requirements were not necessary).

[69] Even the railroad industry's own assessment of the appropriateness of the existing DOT-113 specification for LNG transport is not complete, given that an AAR Tank Car Committee task force (in which PHMSA and FRA are reportedly participating) is "discussing potential improvements in puncture resistance, thermal protection, insulation, tank thickness, location and types of valves/fittings and protective housing" and the Tank Car Committee's recommendations are not expected until "summer 2020." AAR Letter, at 5. The AAR Letter attaches a report dated November 24, 2019 from an "RSI-AAR Railroad Tank Car Safety Research and Test Project" concerning the "puncture resistance" of DOT-113 cryogenic tank cars, but as the transmission memo to that report states "[n]one of the information is conclusive, given the limitations in existing information to draw upon." Letter from Todd Treichel, Project Director, RSI-AAR Railroad Tank Car Safety Research and Test Project to Paul Williams, Norfolk

C. PHMSA required operational controls in a Special Permit for LNG transport by rail that it issued following publication of the Proposed Rule.

On December 5, 2019, PHMSA issued a Special Permit to ETS allowing the company to transport LNG from northern Pennsylvania to southwestern New Jersey in DOT-113C120W specification rail cars.[70] In addition to packaging specifications for the DOT-113C120W rail cars that mirror the "Pressure Control Valve Setting or Relief Valve Setting" specifications in the Proposed Rule, *see* 84 Fed. Reg. 56,968, the Special Permit requires compliance with six "operational controls": (1) compliance with 49 U.S.C § 173.319 and specific further specifications for LNG; (2) limiting shipments of LNG to a single origin-destination pair—"between Wyalusing, PA and Gibbstown, NJ, with no intermediate stops"; (3) defining unit trains as 20 or more tank cars of LNG and requiring submission to PHMSA within 90 days of a plan for moving from single-car shipments to multi-car shipments to unit trains; (4) requiring that trains transporting 20 or more tank cars of LNG be equipped with a special braking device known as a "two-way end of train device as defined in 49 CFR § 232.5 or distributed power as defined in 49 CFR § 229.5"; (5) providing training to emergency response agencies that could be affected between the authorized origin and destination, in conformance with "NFPA-472, including known hazards in emergencies involving the release of LNG, and emergency response methods to address an incident involving a train transporting LNG" before initial shipment of a single tank car under the permit; and (6) requiring remote monitoring of "each tank for pressure, location, and leaks."[71]

The Special Permit EA states that under PHMSA's regulations, the agency may "only grant special permits when the decision 'achieves a level of safety at least equal to that required by regulation, or if a required safety level does not exist, is consistent with the public interest.'"[72] The Special Permit EA proceeds to consider only two alternatives: (1) the "Selected Action Alternative"—issuance of the Special Permit with the six above-listed "operational controls" that would give ETS "the option to transport LNG in DOT-113C120W tank cars"; or (2) the "No Action Alternative" under which ETS "will transport LNG by DOT specification MC-338 cargo tanks" on trucks via highways.[73]

Notably, the Special Permit EA does not consider any alternative where the agency would authorize ETS to transport LNG by rail without mandatory operational controls—the scenario presented in PHMSA's Proposed Rule. The Special Permit EA recognizes that "the scope of potential injury and death could be greater in a populated area for a DOT-113 failure because of higher volumes of LNG carried in each tank car (by about a factor of 3) compared to the volume transported in a MC-338 transport."[74] Nonetheless, PHMSA concluded that granting

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Southern Railway, T79.40 Task Force, Nov. 24, 2019, https://www.regulations.gov/document?D=PHMSA-2018-0025-0209.

[70] *See* Special Permit DOT SP20534.

[71] *Id.* at 2-3.

[72] Special Permit EA at 1 (citing 49 C.F.R. § 107.105(d)).

[73] *Id.* at 4-7.

[74] *Id.* at 17.

the Special Permit would not have a significant impact on the environment because "[w]hile the Selected [Action] Alternative has some risk to public safety, similar to ongoing transportation of hazardous materials, the risk is considered very low and is minimized by implementing the safety control measures set forth in the special permit" and that, "[c]onsistent with 49 C.F.R. § 107.105(d), PHMSA finds that the Selected Action achieves a level of safety at least equal to that required by regulation."[75] It stands to reason that any subsequent revision to the HMR that would broadly allow the movement of LNG in rail tank cars must also include safety control measures to minimize the significant risk to public safety. Nonetheless, the Proposed Rule inexplicably lacks even basic operational controls.

To be clear, the States do not take the position that the operational controls imposed on the Special Permit sufficiently protect public safety. Indeed, they do not include all of the "minimum" operational controls urged in NTSB's December 5, 2019 letter and notably omit restrictions on routing through populated areas. The States, however, are gravely concerned by the utter absence of *any* similar operational controls in the Proposed Rule. That omission cannot be reconciled with the agency's recognition that such controls are necessary for a Special Permit which authorizes future shipments of LNG by rail tank car between a single origin and destination spanning two neighboring states.[76]

D. The Proposed Rule largely overlooks concerns about emergency responses to LNG releases and ignores the terrorism risks associated with LNG transport by unit trains.

The Proposed Rule does not even acknowledge—as the Special Permit does through an operational control—that local emergency responders, particularly in "high-threat urban areas" and other populated areas, may require specialized training and equipment if called to respond to LNG explosions, fires and other catastrophic releases. The National Association of State Fire Marshals—which represents state-level fire safety officials serving in every state—has accordingly opposed the Proposed Rule based on "the lack of evidence and research that allowing such an action . . . is safe either for America's first responders or the public."[77] Similarly, the International Association of Fire Fighters (Fire Fighters' Association), which "represents over 320,000 fire fighters and emergency medical personnel, serving communities large and small in every state," has urged PHMSA to "place the safety of the public ahead of any political pressures to reduce the burdens of regulations."[78]

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[75] *Id.* at 32.

[76] *See Advocates for Highway & Auto. Safety v. Fed. Motor Carrier Safety Admin.*, 429 F.3d 1136, 1139-40 (D.C. Cir. 2005) (finding Federal Motor Carrier Safety Administration's rule regarding private-sector safety training for drivers of trucks and buses to be arbitrary and capricious under APA where there was a "striking incongruity between the methods of training previously shown to be effective and the regimen adopted in the final rule"); *see also Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (discussing grounds for finding rulemaking to be "arbitrary and capricious" under APA, 5 U.S.C. § 706(2)(A)).

[77] *See* Comment submitted by James D. Narva, Executive Director, National Association of State Fire Marshals, https://www.regulations.gov/document?D=PHMSA-2018-0025-0096.

[78] *See* Comment submitted by Harold A. Schaitberger , General President, International Association of Fire Fighters (December 23, 2019), at 4, https://www.regulations.gov/document?D=PHMSA-2018-0025-0110.

The Fire Fighters' Association has also stressed that "it is impossible to move forward on the PHMSA proposal without an extensive safety and risk analysis."[79] They estimate that the LNG contents of a single DOT-113C120W tank car that becomes punctured "would expand to cover over 2,500,000 cubic feet," equivalent to "an area 135 feet in all directions from the contents of a single tank car."[80] Further, "with the growth of a gaseous cloud, a very significant portion would be within the flammable range, thus creating a substantial hazard of an explosion."[81] If the train is a unit train consisting of 100 tank cars of LNG, "this would result in over three-million gallons of LNG exposed to fire, leading to a blast potential in a populated area that would create a high risk of danger to the population, emergency responders and property."[82] The Fire Fighters' Association also notes that a U.S. Department of Transportation Emergency Response Guide "suggests [that] any incident involving a LNG tank rupture requires immediate evacuation of at least one-half mile downwind" and "one mile in all directions" if an LNG tank fire is involved—an evacuation zone that "is problematic for all but a very few jurisdictions across the United States."[83] Moreover, the Association emphasizes that "[i]ncident responses occurring without a robust cadre of highly trained responders, absent across most of America, will undoubtedly experience deadly and disastrous outcomes."[84]

The uniquely hazardous qualities of LNG further exacerbate community safety and local emergency response concerns related to long freight trains. A Government Accounting Office (GAO) study from May 2019 found that "[f]reight train length has increased in recent years, according to all seven Class I freight railroads," but that "FRA is not fully assessing community impacts related to longer trains," particularly the issue of safety at grade crossings.[85]

On top of that, the Proposed Rule, its EA, and the Preliminary RIA are silent on terrorism-related risks that may be associated with permitting trains, including unit trains in populated urban and suburban areas, to transport LNG. As Dr. Fred Millar, an expert on hazardous materials transportation and related issues, pointed out in an affidavit submitted as part of a comment on ETS's special permit application, "[o]ne can hardly tout LNG as a major new essential element in U.S. energy security and simultaneously decline to address the potential for long and visible LNG trains moving relatively slowly through major cities to be very attractive targets for terrorism."[86]

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[79] *Id.*
[80] *Id.* at 1.
[81] *Id.* at 2.
[82] *Id.*
[83] *Id.* at 3. The Appendix hereto contains maps of active rail lines within the States, which illustrate the extent to which freight rail lines pass through or near heavily populated areas.
[84] *Id.* at 3-4.
[85] U.S. G.A.O. Report to Congressional Requesters, GAO-19-443, *Rail Safety: Freight Trains Are Getting Longer, and Additional Information Is Needed to Assess Their Impact* (May 2018), at 27, https://www.gao.gov/assets/700/699396.pdf. The U.S. Department of Transportation concurred with the GAO Report's recommendations to FRA on the need to share research results with various stakeholders and on working with railroads to engage state and local governments to address community-specific impacts of increasingly long freight trains. *Id.* at 29.
[86] Affidavit of Fred Millar, Aug. 17, 2019, ¶ 17, *available within* Earthjustice letter to PHMSA, Aug.7, 2019, https://www.regulations.gov/document?D=PHMSA-2019-0100-2763.

The States do not believe that the Proposed Rule can be finalized without a robust assessment by PHMSA, in consultation with other relevant agencies, regarding these significant safety concerns.

IV. The Environmental Assessment fails to address the Proposed Rule's reasonably foreseeable effect on greenhouse gas emissions.

PHMSA itself acknowledges the Proposed Rule's "potential to… enhance domestic energy production," 84 Fed. Reg. 56,966, only to act as if its proposal will have no effect on either upstream production or downstream consumption of natural gas in its Environmental Assessment. *Id*. at 56,975 (discussing "Air Pollution and Greenhouse Gases" without any analysis of upstream or downstream impacts).[87] According to the EA, the Proposed Rule's primary environmental impact will be to remove LNG transporting trucks from highways.[88] But it strains credulity to expect that rail transport will function solely as a substitute for truck traffic. Such a notion is contrary to statements made by both AAR and PHMSA that the change will spur upstream production of natural gas and downstream demand.[89]

In the Special Permit EA, the agency acknowledged that "granting this special permit application may result in additional business opportunities to be realized because of the efficiencies of transporting LNG by rail and thereby further incentivize domestic production" and that this "could include end-use applications (such as power plants), export facilities, and the associated loading/unloading facilities that would accompany such developments."[90] And as the Special Permit EA noted, issuance of the Special Permit gives ETS "the option to transport LNG in DOT-1113C120W tank cars" but does not require any curtailment in the use of trucks to transport LNG, pointing out that no regulatory approval is required from the U.S. Department of Transportation "to transport any quantity of LNG via highway in MC-338 cargo tanks."[91] This leaves open the possibility that LNG transported in rail tank cars will be additional to LNG that is currently transported by truck. By failing to assess whether the upstream and downstream effects of the Proposed Rule may result in increased LNG transport by all available means, including continued reliance on emission-heavy truck fleets, PHMSA has violated NEPA's requirement that an agency consider the environmental consequences of its proposed action before finalizing its course.[92]

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[87] *See also* Preliminary RIA at 18 (stating that the Proposed Rule would "promot[e] domestic energy production and consumption.").

[88] 84 Fed. Reg. at 56,975 ("LNG via rail instead of via highway would reduce the emission of air pollution and the emission of GHGs… moving freight by rail instead of truck lowers GHG emissions by 75% . . . freight railroads account for only .5% of total U.S. [GHGs].")

[89] *See, e.g.*, AAR Petition at 2 ("Authorizing transportation of LNG by rail likely will stimulate more interest."); 84 Fed. Reg. at 56,966 (PHMSA agreeing with AAR that the proposal will "enhance domestic energy production"); Preliminary RIA at 18.

[90] Special Permit EA at 24. PHMSA claims in the Special Permit EA, similarly to its EA for the Proposed Rule, that "it is too speculative to reach any conclusions about whether approving this special permit would result in the development of new end-use projects, let alone the extent of any such projects' natural gas utilization or any increased production they might entail." *Id.*

[91] *Id.* at 7.

[92] *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (explaining that NEPA's "sweeping policy goals" are "realized through a set of 'action forcing' procedures that require that agencies take a 'hard look at environmental consequences.'") (quoting *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976)).

NEPA requires a far-deeper assessment of the reasonably foreseeable environmental impacts of the Proposed Rule, including its effects on greenhouse gas emissions.[93] The upstream and downstream impacts of allowing bulk shipment of LNG in rail tank cars are an essential part of the proposal's environmental impact that cannot be ignored. Rather, they must be featured in the agency's NEPA analysis. *See* 40 C.F.R. § 1502.16 (directing that NEPA analysis of environmental consequences must include discussion of the "indirect effects and their significance" of a proposed action), 40 C.F.R. § 1508.8 (defining "indirect effects" as those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable" which includes "growth inducing effects" and their "related effects on air and water and other natural systems.").

Nor is PHMSA excused from considering the greenhouse gas impacts of its proposal because of a "lack [of] expertise to perform a quantitative prediction of how this rulemaking could affect GHG emissions."[94] NEPA applies to all federal agencies regardless of their level of familiarity with environmental issues. That is exactly the point. Just as the Federal Aviation Administration is required to consider the growth-inducing impacts of constructing an additional airport runway even though it is not an expert on local development, PHMSA must consider the greenhouse gas impacts of allowing rail car shipments of LNG even though it is not an "expert" on air pollution.[95]

NEPA's implementing regulations specifically contemplate this very situation and authorize a lead agency to designate a cooperating agency to provide expertise that the lead agency would otherwise lack. 40 C.F.R. § 1501.6. Obvious choices here would include the Department of Energy, which tracks trends in natural gas consumption and production, and the Environmental Protection Agency, which frequently deals with greenhouse gases and their contribution to global warming. Even if PHMSA did not have this data in front of it, NEPA requires that the agency at least attempt to ascertain those impacts.[96]

V. PHMSA should withdraw the Proposed Rule pending the development of a full Environmental Impact Statement.

NEPA requires the preparation of an Environmental Impact Statement (EIS) prior to an agency embarking upon "major federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332. While, in certain instances, an agency can meet this requirement by preparing a less extensive EA, that document must nevertheless consider all environmental aspects of a proposal that are reasonably foreseeable. If a comprehensive EA reveals that the action will not have a significant impact on the environment, the agency may

[93] *Compare* 84 Fed. Reg. at 56,970-75 (providing "Environmental Assessment" without any discussion of reasonably foreseeable upstream or downstream impacts) *with Sabal Trail*, 867 F.3d at 1374 ("[G]reenhouse-gas emissions are an indirect effect of authorizing this project, which [the agency] could reasonably foresee, and which the agency has legal authority to mitigate.").

[94] Proposed Rule, 84 Fed. Reg. at 56,975.

[95] *See Barnes v. U.S. Dept. of Transp.*, 655 F.3d 1124, 1134 (9th Cir. 2011) (holding that FAA violated NEPA by failing to consider induced growth from runway expansion); *see also Utahns for Better Transp. v. U.S. Dept. of Transp.*, 305 F.3d 1152, 1174 (10th Cir. 2002) (upholding EIS upon finding that Federal Highway Administration adequately considered the growth inducing impacts highway project).

[96] *See Barnes*, 655 F.3d at 1136 ("an agency must use its best efforts to find out all that it reasonably can.").

issue a Finding of No Significant Impact (FONSI) and need not develop a more detailed EIS. Determining whether an action is significant involves examining the context and intensity of the action. *See* 40 C.F.R. § 1508.27 (discussing context and laying out 10 intensity factors).

As described above, PHMSA failed to consider several important aspects of its proposal rendering its EA insufficient and its FONSI fundamentally flawed. These overlooked aspects include the greenhouse gas emissions attributable to the additional development and use of natural gas that are reasonably foreseeable effects of the Proposed Rule and the potential impacts to public safety and the environment from any accidental releases of LNG being transported by rail. Such omissions show that an EIS is necessary here. *See, e.g.*, *Anderson v. Evans*, 350 F.3d 815, 835 (9th Cir. 2003) (holding that EA's failure to address "critical question" required full EIS).

Conclusion

The States urge PHMSA to withdraw the Proposed Rule pending the completion of the above referenced safety studies and the subsequent development of a full Environmental Impact Statement reflecting at least the issues and concerns set forth above.

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APPENDIX:

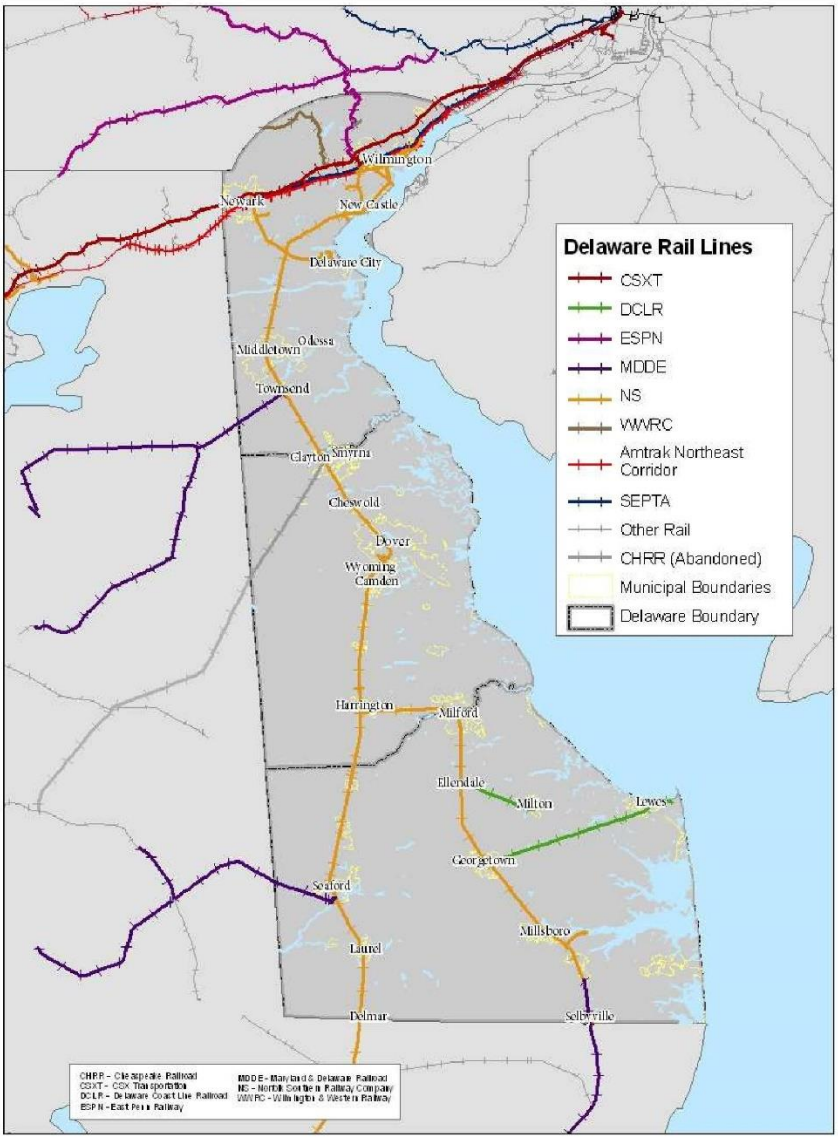
Freight Rail Lines in Signatory States

State of California, Class I and Public Agency Owned Rail System

California Department of Transportation, *California Statewide Rail Plan*, Exhibit 2.5 https://dot.ca.gov/programs/rail-and-mass-transportation/california-state-rail-plan.

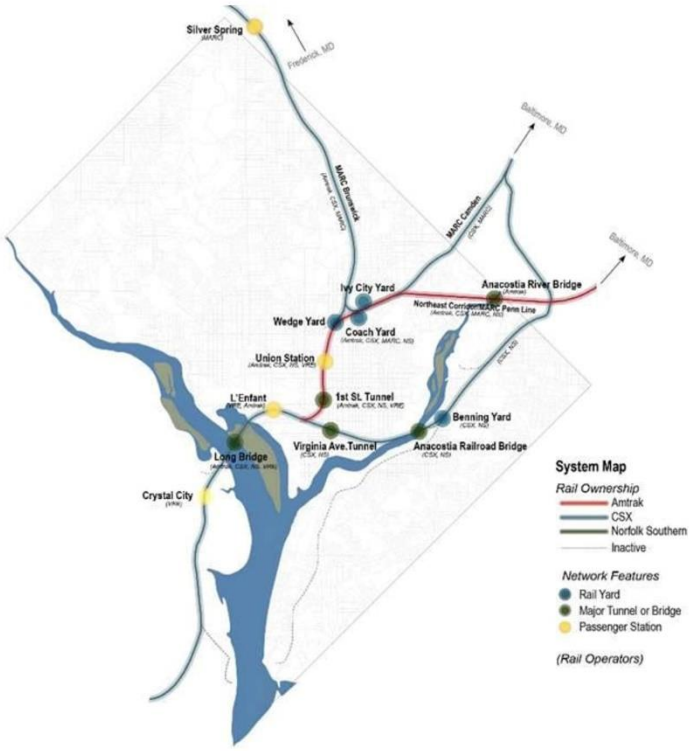
State of Delaware, Rail Network

FIGURE 4-1: DELAWARE'S RAIL NETWORK



Delaware Department of Transportation, *Delaware State Rail Plan*, Fig. 4-1 (2011) https://deldot.gov/Publications/reports/srp/pdfs/srp_final.pdf

District of Columbia, Rail System Map



District of Columbia Department of Transportation, *D.C. State Rail Plan*, Fig. 3-6 (2017) https://ddot.dc.gov/sites/default/files/dc/sites/ddot/page_content/attachments/DC%20SRP%20FinalReport.pdf

State of Illinois, Freight Rail Network

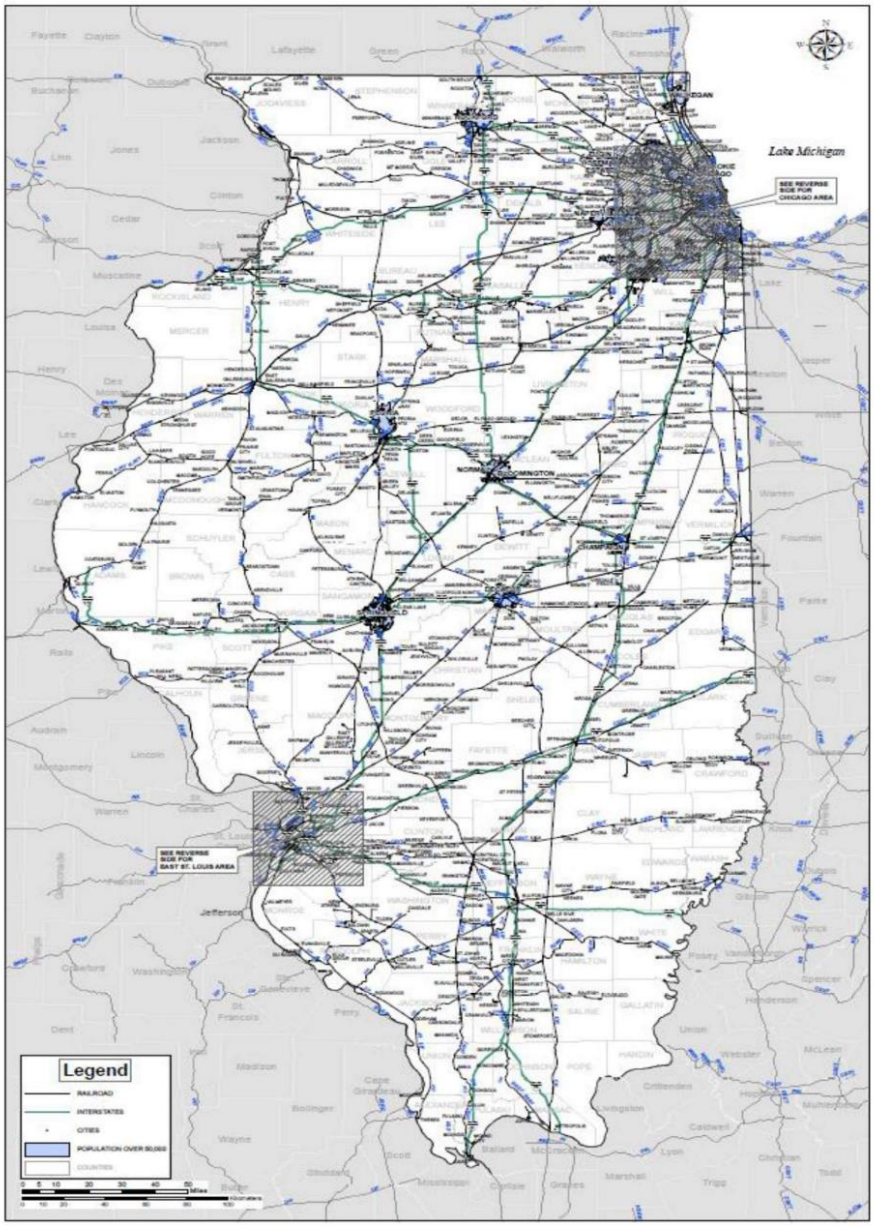
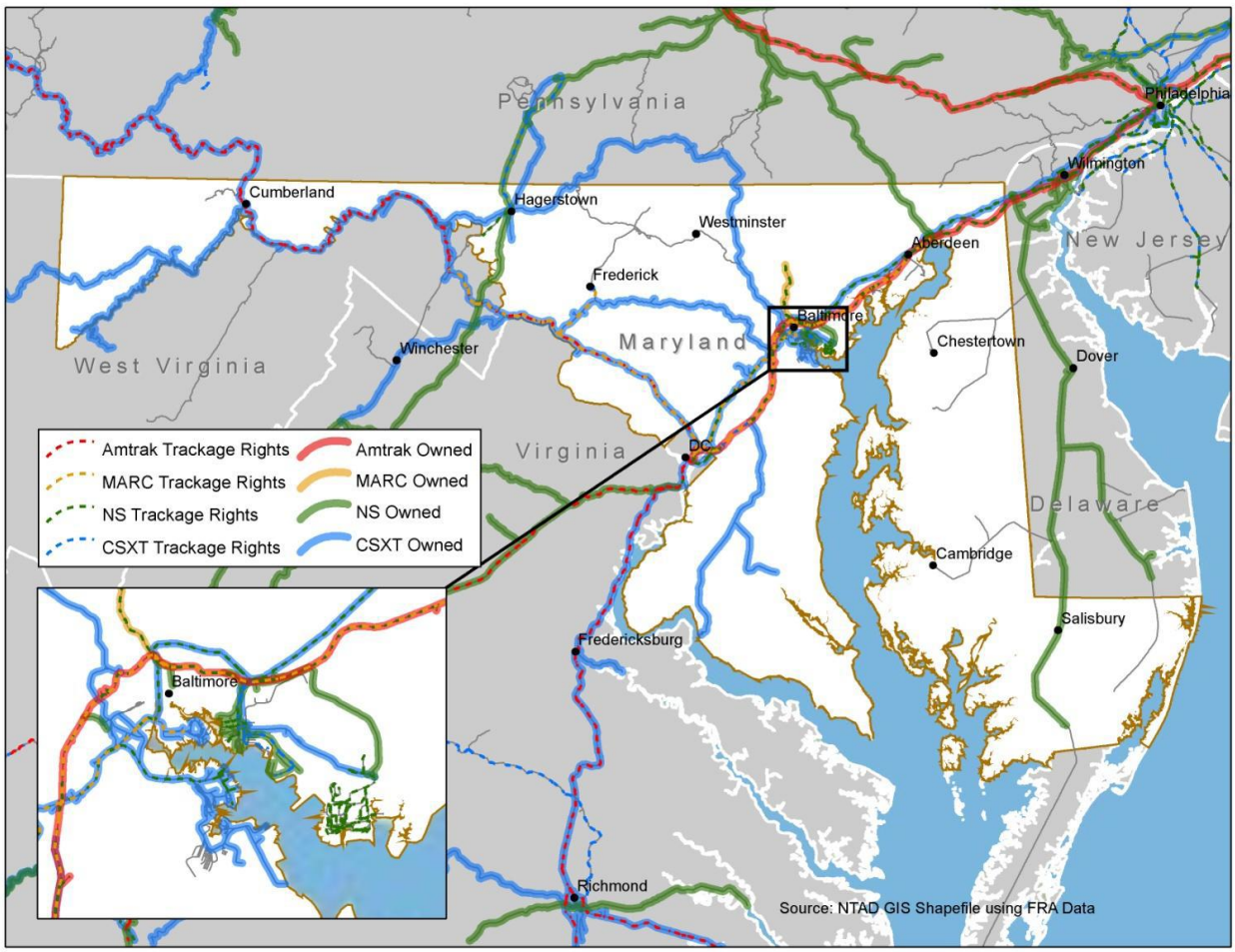


Figure 2.1.1 Illinois Freight Rail Network (Source: IDOT)

Illinois Department of Transportation, Illinois State Rail Plan, Fig. 2.1.1 (2012) https://idot.illinois.gov/transportation-system/transportation-management/planning/illinois-rail-plan

State of Maryland, Class 1 Freight and Passenger Lines

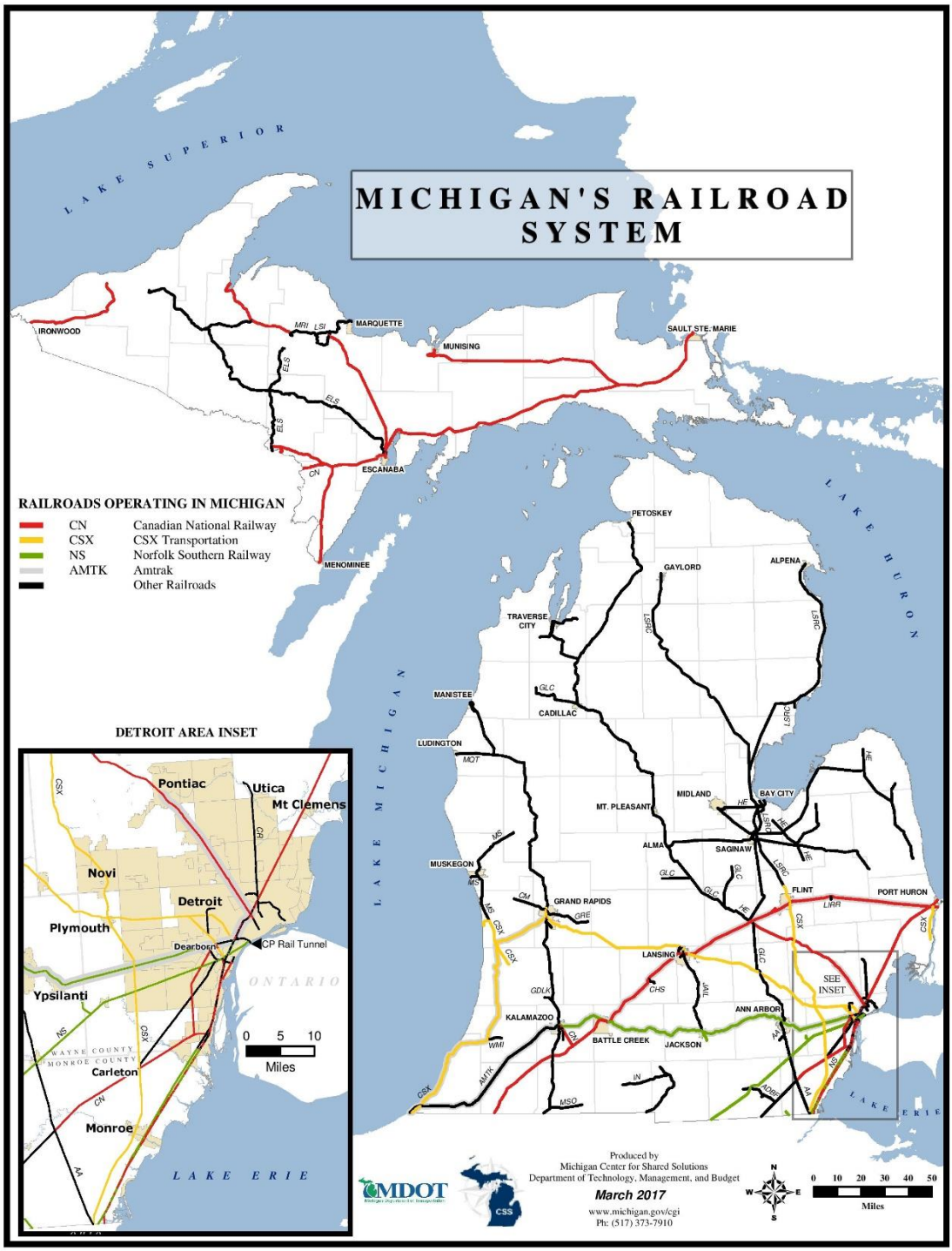


Maryland Department of Transportation, *Maryland Statewide Rail Plan*, 4-2 Fig. 4.1 (April 2015) http://www.mdot.maryland.gov/newMDOT/Freight/Documents/2018/State_Rail_Plan_2015.pdf.

Commonwealth of Massachusetts, Freight Railroad Operators

Massachusetts Department of Transportation, *Massachusetts State Rail Plan*, Fig. ES-4 (2018)
https://www.mass.gov/service-details/rail-plan

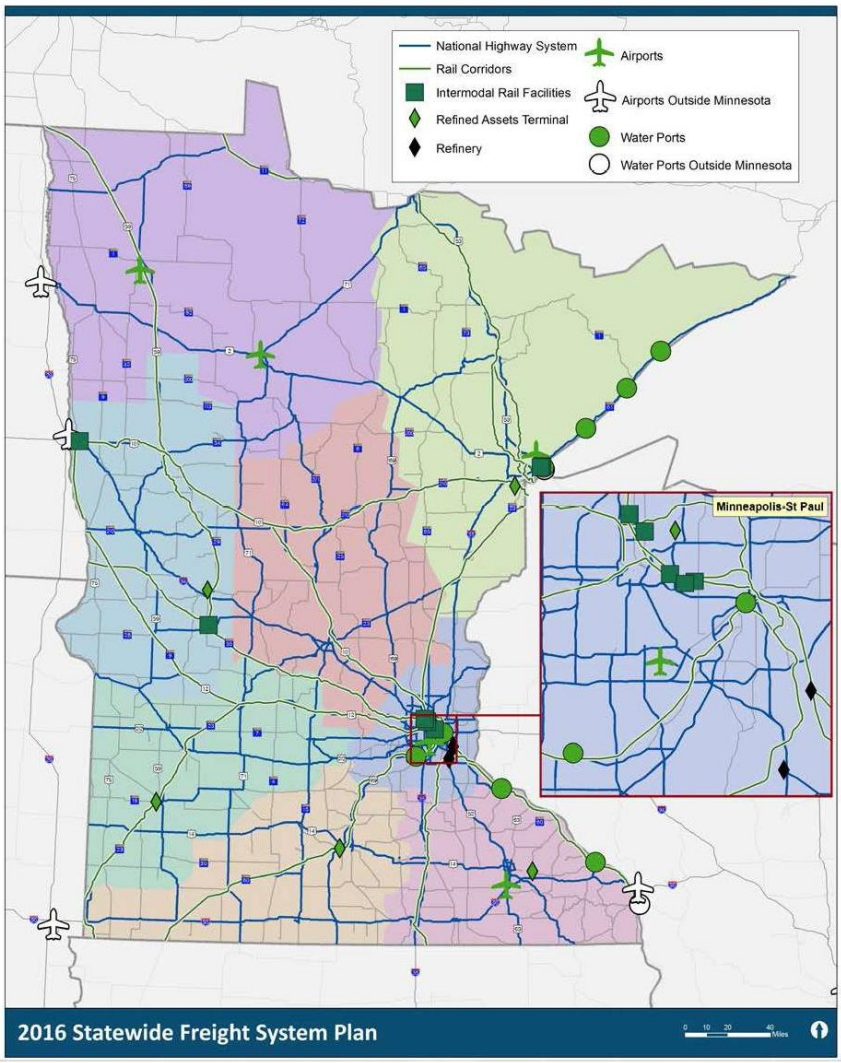
State of Michigan, Railroad System



Michigan Department of Transportation, Office of Rail (March 2017)
https://www.michigan.gov/documents/mdot/MI_Rail_Map_553909_7.pdf

State of Minnesota, Principal Freight Network

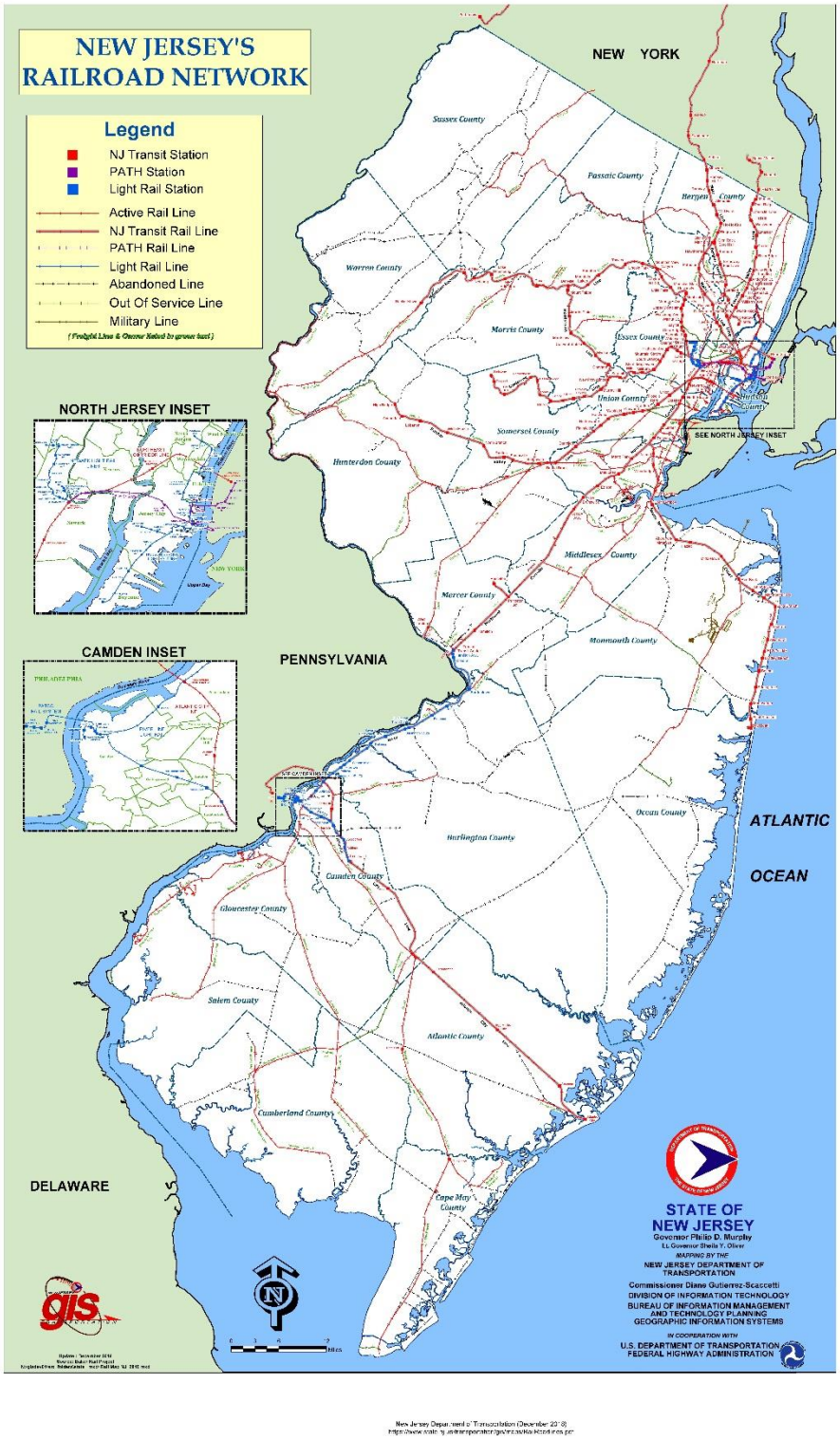
Figure 2.12 Minnesota's Principal Freight Network



Note: Map does not reflect changes to the National Highway System (NHS) resulting from the 2014-2015 greater Minnesota functional classification review

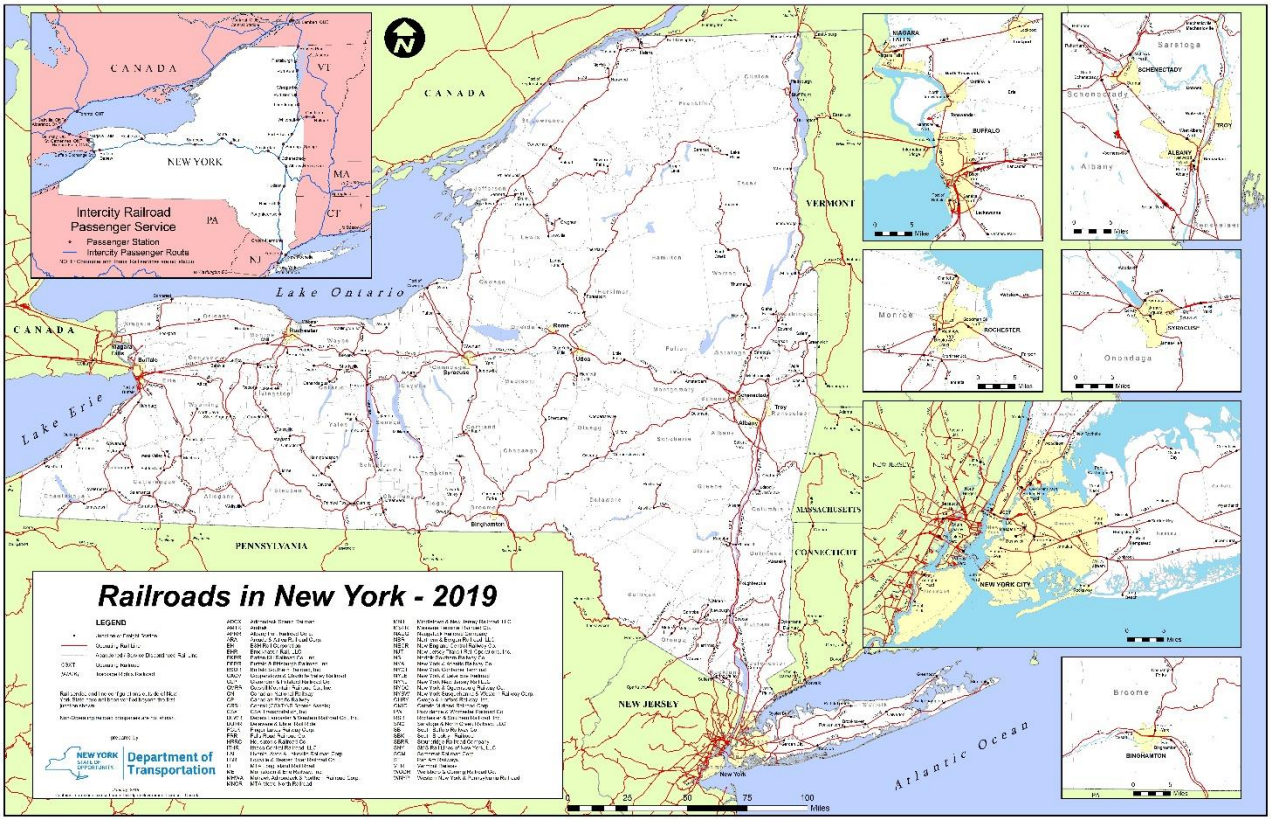
Minnesota Department of Transportation, *Minnesota Statewide Freight System Plan*, Fig. 2.12 (2018) https://www.dot.state.mn.us/planning/freightplan/pdf/mn-statewide-freight-system-plan.pdf.

State of New Jersey, Railroad Network



New Jersey Department of Transportation, *New Jersey State Rail Plan* (April 2015) https://www.njtransit.com/pdf/NJStateRailPlan.pdf.

State of New York, Railroad System



New York State Department of Transportation (January 2019)
https://www.dot.ny.gov/divisions/operating/opdm/passenger-rail/railroadsmap

State of North Carolina, Rail System

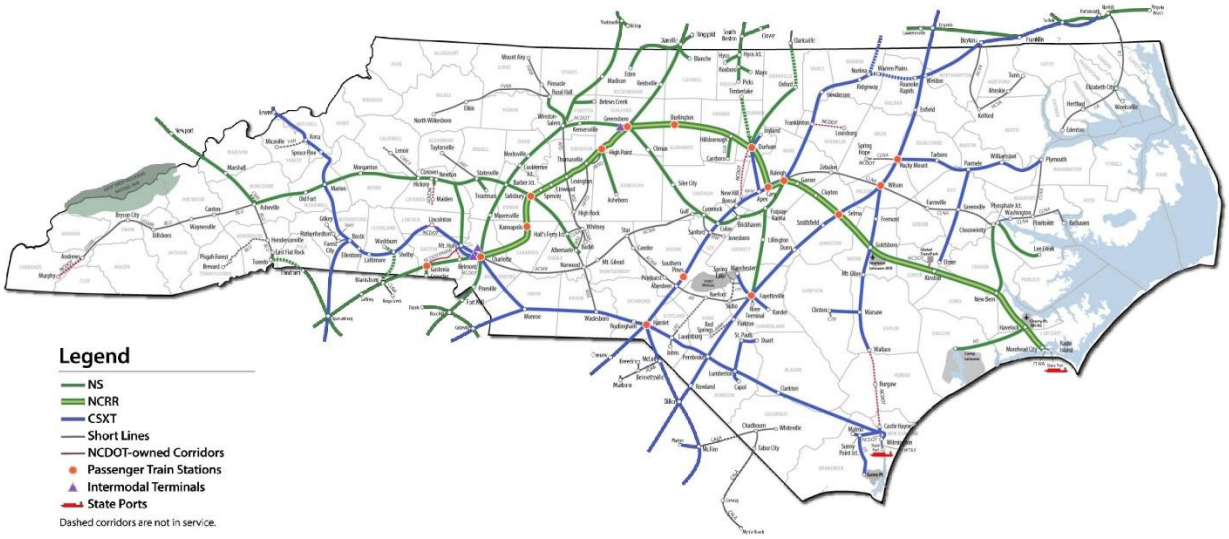
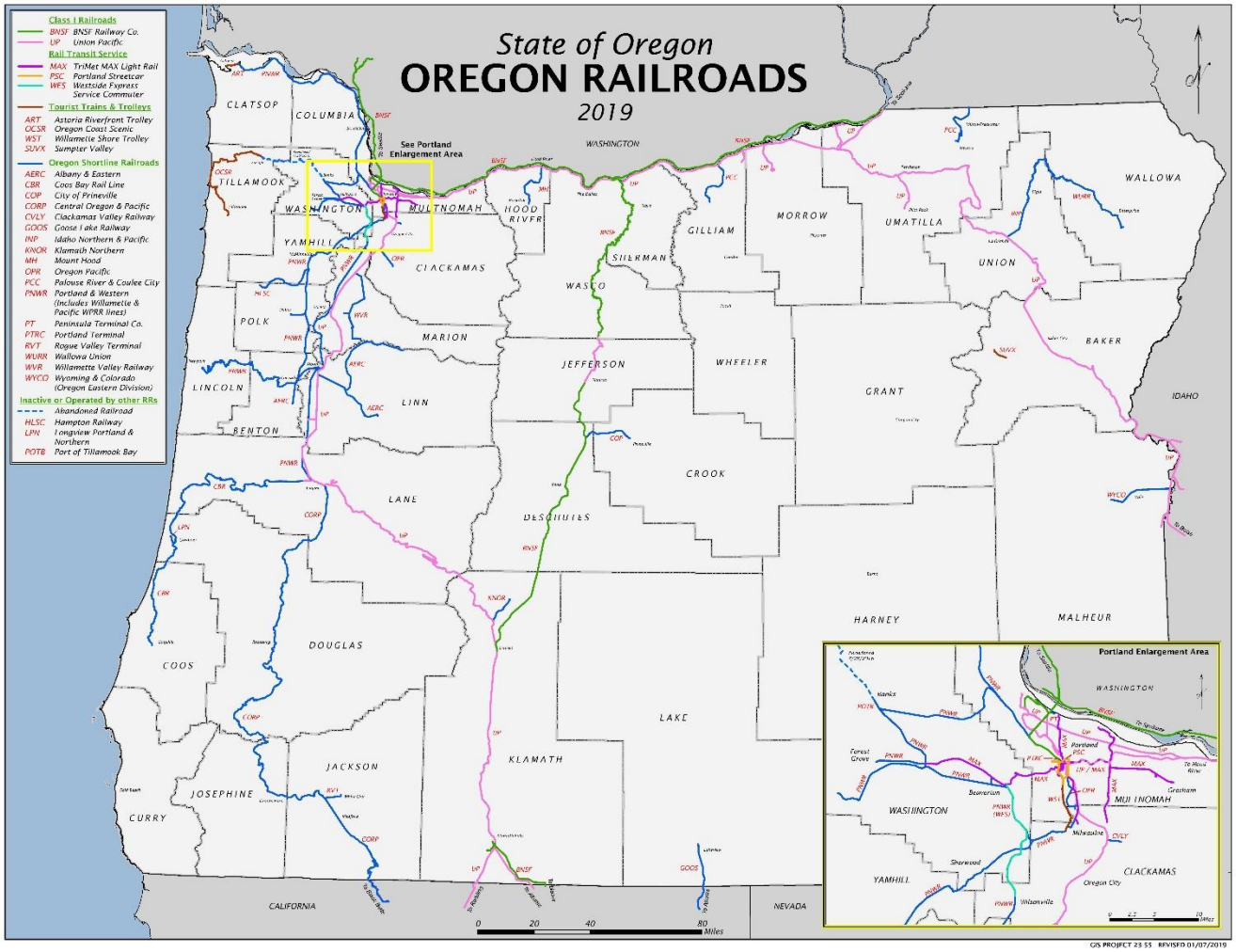


Figure 1-1 North Carolina's Rail System

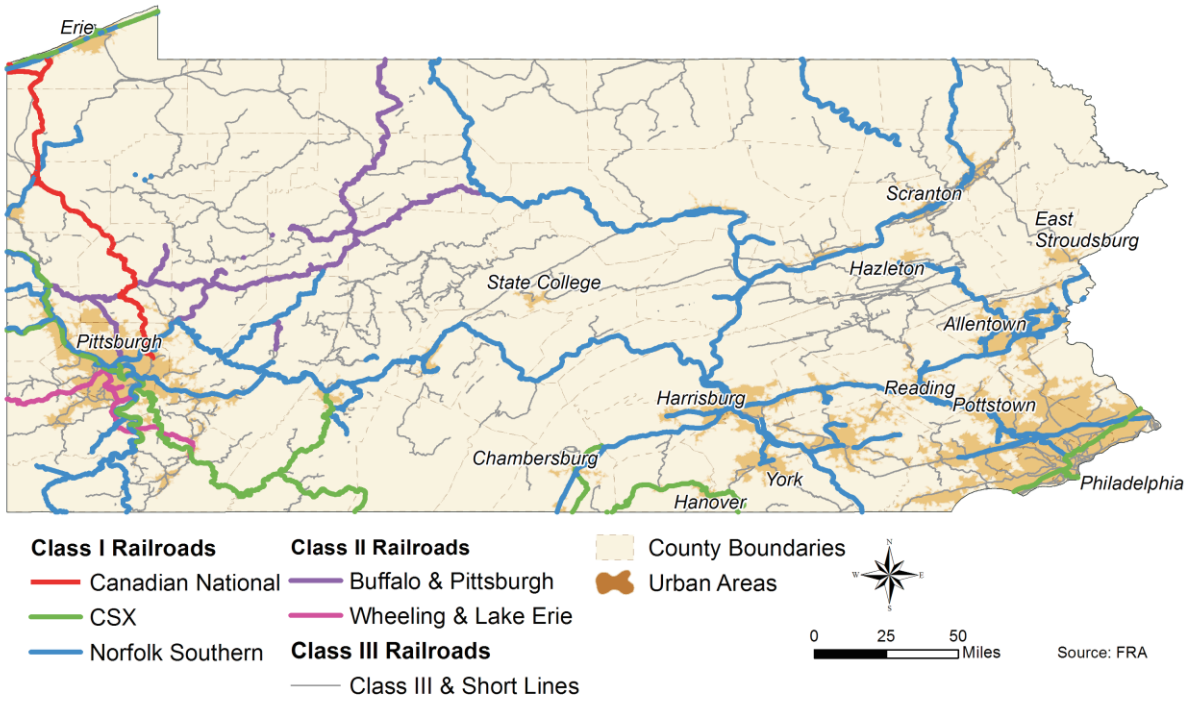
North Carolina Department of Transportation, North Carolina State Rail Plan, Fig. 1-1 (2015) https://connect.ncdot.gov/resources/Rail-Division-Resources/Documents/2015%20Comprehensive%20State%20Rail%20Plan-%20Full%20Report.pdf

State of Oregon, Railroad System



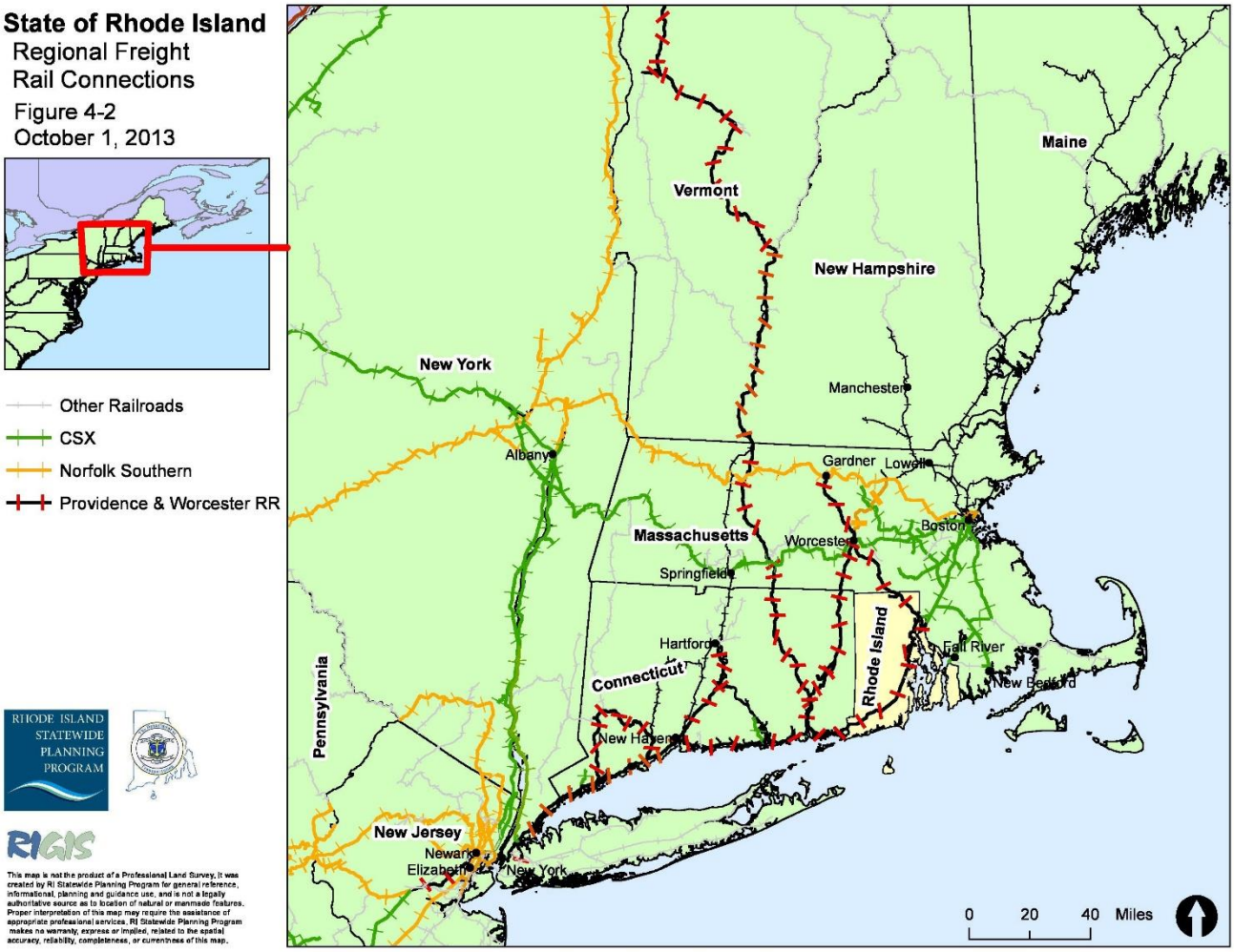
Oregon Department of Transportation, *Oregon Rail System Map* (2019)
https://www.oregon.gov/ODOT/RPTD/Pages/Rail-Maps.aspx

Commonwealth of Pennsylvania, Existing Freight Rail System



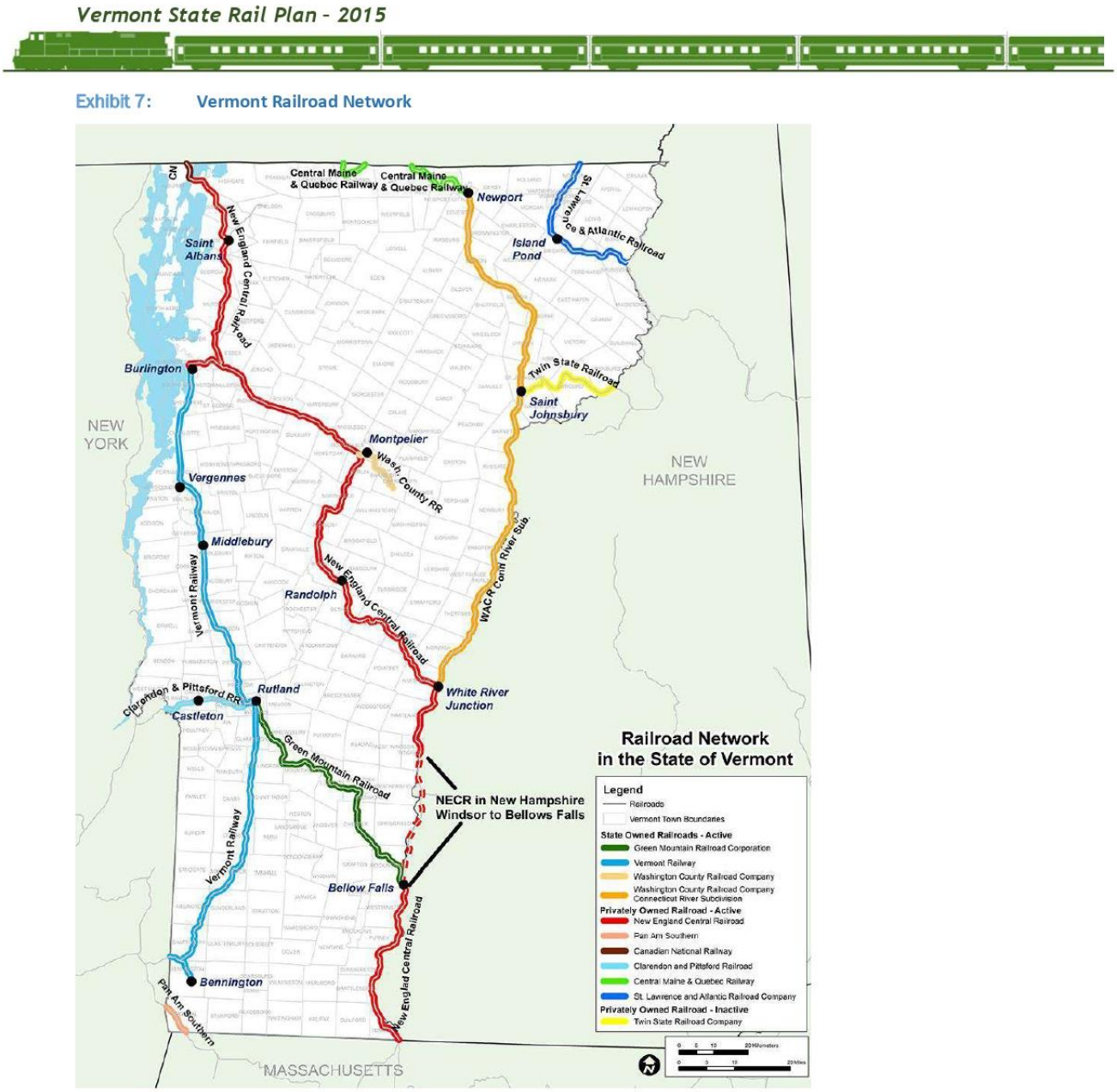
Pennsylvania Department of Transportation, *Pennsylvania State Rail Plan*, App.L (2015) https://www.penndot.gov/Doing-Business/Transit/InformationandReports/Documents/2015%20Pennsylvania%20State%20Rail%20Plan%20(low).pdf.

State of Rhode Island, Regional Freight Rail Connections



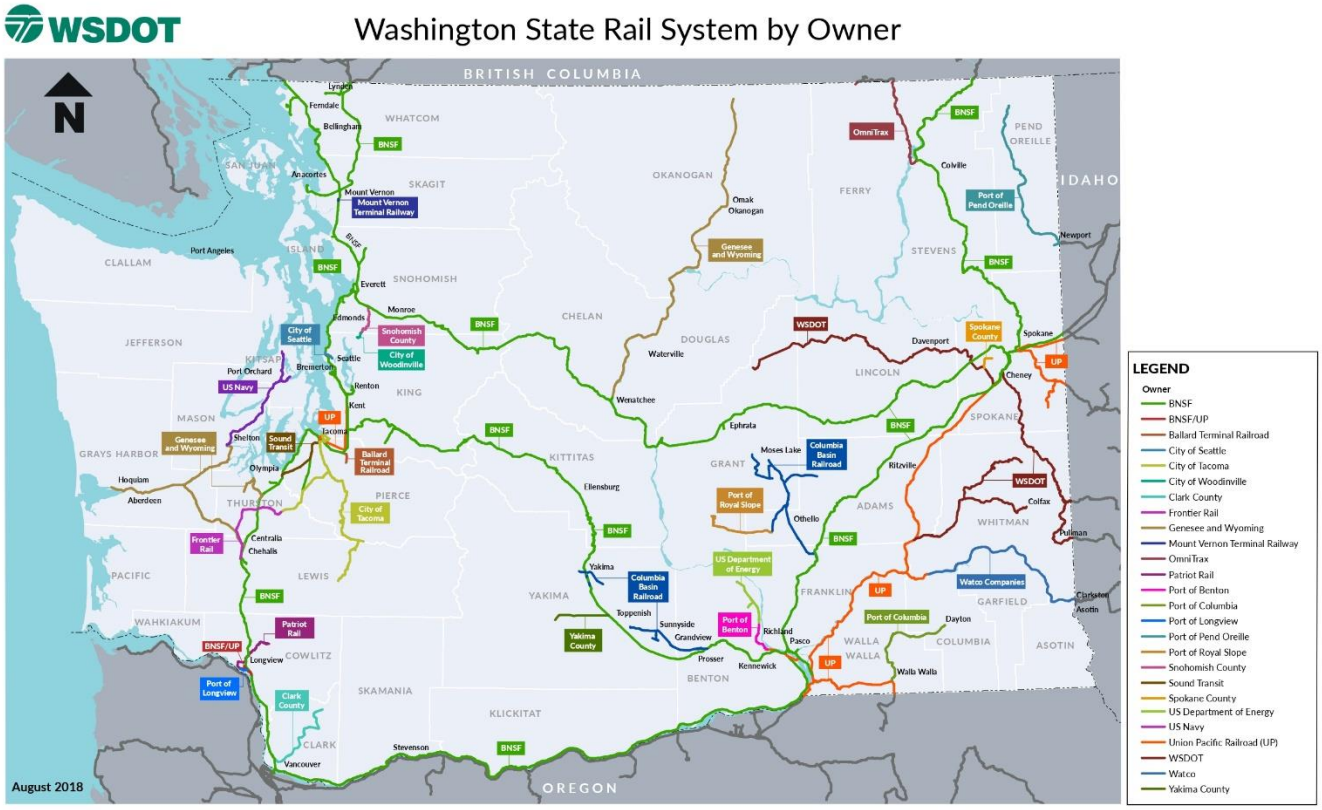
Rhode Island Department of Administration, Rhode Island State Rail Plan, Fig. 4-2 (2014)
http://www.planning.ri.gov/documents/trans/Rail_Plan_12_18_13.pdf

State of Vermont, Railroad Network



Vermont Agency for Transportation, *Vermont State Rail Plan*, Ex. 7 (2015) https://vtrans.vermont.gov/sites/aot/files/rail/VT%20State%20Rail%20Plan_Final.pdf.

State of Washington, Rail System By Owner



State of Washington Department of Transportation, *Washington State Rail System By Owner* (2015)
https://www.wsdot.wa.gov/NR/rdonlyres/1FA0FD58-C5AD-46A8-BE95-1D2FC904D66F/0/2015WashingtonRailSystem.pdf