



Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington, DC 20515

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SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Highways and Transit and Subcommittee on Railroads, Pipelines, and Hazardous Materials
FROM: Staff, Subcommittee on Highways and Transit and Subcommittee on Railroads, Pipelines, and Hazardous Materials
RE: Joint Subcommittee Hearing on “Where’s My Stuff?: Examining the Economic, Environmental, and Societal Impacts of Freight Transportation”

PURPOSE

On Thursday, December 5, 2019, at 10:00 a.m., in 2167 Rayburn House Office Building, the Subcommittee on Highways and Transit and the Subcommittee on Railroads, Pipelines, and Hazardous Materials will jointly hold a hearing on “Where’s My Stuff?: Examining the Economic, Environmental, and Societal Impacts of Freight Transportation.” The purpose of the hearing is for Members of the Subcommittees to explore the importance of freight transportation, investment needed to support freight transportation, and the ways in which demand for goods movement is growing and changing. The Subcommittees will hear from representatives of the Coalition for America’s Gateways and Trade Corridors (CAGTC), the American Short Line and Regional Railroad Association (ASLRRA), the University of Washington Supply Chain Transportation and Logistics Center, the Association of American Railroads (AAR), the Environmental Defense Fund (EDF), and the American Association of State Highway and Transportation Officials (AASHTO).

BACKGROUND

Freight transportation and related industries significantly contribute to the U.S. economy. The nation’s freight system transports, on average, 51 million tons of freight, valued at approximately \$55 billion, on a daily basis, which amounts to approximately 17.7 billion tons of freight, valued at approximately \$16.8 trillion, annually.¹ In 2016, the demand for transportation

¹ TRIP, “America’s Rolling Warehouses: Opportunities and Challenges with the Nation’s Freight Delivery System”, October 2019.

accounted for 8.9 percent of U.S. Gross Domestic Product.² Demand for freight transportation is rising at a disproportionate rate to freight system capacity.³ The U.S. Department of Transportation (U.S. DOT) estimates that freight movements are expected to grow across all modes, and by 2040, will increase by 42 percent.⁴

Freight Railroads

The U.S. freight railroad industry operates a 140,000-mile network across the country, delivering on average five million tons of goods every day. This industry is composed of varying sized railroads measured by their annual operating revenues into three different classes. The largest railroads include the seven Class Is, which are the biggest railroads that collectively provide long-haul operations in 44 states and D.C.⁵ The Class Is account for nearly 69 percent of the industry's mileage.⁶

The 603 short line and regional railroads operate nearly 40% of the nation's rail network by mileage.⁷ Short lines are often the only way rural America can connect to the rest of the national freight rail network—playing an important role in providing first-mile and last-mile service that extends the reach of the rail network to rural communities, manufacturers, farmers, and others.⁸ These smaller railroads range in size from small operators handling just a few carloads a month, to others that cross state lines and approach the size of the large Class I railroads. These railroads operate 100 percent of the rail network in five states; and 50 percent of the rail network in another 15 states.⁹

Volume of Freight Moved by Rail

In 2018, the freight railroads operating in the U.S. transported 17,910,549 carloads, including 17,708,351 moved by the Class Is and 202,198 moved by the short lines. Transported inside those carloads were a range of commodities such as: agricultural and food products; chemicals and petroleum; coal; forest products; metallic ores and metals; motor vehicles and parts; nonmetallic minerals and products; waste, scraps, and other products. Additionally, the freight railroads transported 18,066,668 intermodal units, which are shipping containers and truck trailers that are transferred to the railroads and moved on rail cars.

² Bureau of Transportation Statistics, Transportation Economic Trends 2018 (<https://www.bts.gov/transportation-economic-trends/tet-2018-chapter-2-contribution-economy>).

³ FHWA, Urban Goods Movement, https://ops.fhwa.dot.gov/freight/technology/urban_goods/index.htm.

⁴ U.S. DOT, National Freight Strategic Plan, Draft for Public Comment, p. 15.

⁵ The seven Class railroads include Burlington Northern Santa Fe Railway (BNSF); Union Pacific Railroad (UP); Norfolk Southern Railway (NS); CSX Transportation; Canadian National Railway (CN); Canadian Pacific Railway (CP); and Kansas City Southern (KCS).

⁶ Association of American Railroads <https://www.aar.org/railroad-101/>.

⁷ American Short Line and Regional Railroad Association <https://www.aslrra.org/web/About/About/web/About/About.aspx?hkey=ffdbe611-bc49-4db1-902b-1ac672226682>.

⁸ American Short Line and Regional Railroad Association https://www.aslrra.org/web/About/Industry_Facts/web/About/Industry_Facts.aspx?hkey=bd7c0cd1-4a93-4230-a0c2-c03fab0135e2.

⁹ American Short Line and Regional Railroad Association <https://www.aslrra.org/web/About/About/web/About/About.aspx?hkey=ffdbe611-bc49-4db1-902b-1ac672226682>.

Environmental Impacts

In 2018, the freight railroads, on average, moved one ton of freight 473 miles on one gallon of fuel. This efficiency is a 101 percent improvement compared to 1980 and a 19 percent improvement from 2000.¹⁰ As a result, the freight railroads reduced their consumption of fuel by nine billion gallons and emitted 100 million fewer tons of carbon dioxide.¹¹ In total, the freight railroads comprised just 2 percent of all transportation-related greenhouse gas emissions in 2017 and just 0.6 percent of total U.S. greenhouse gas emissions in 2017.¹²

The freight railroads use various technology systems to help achieve such levels of sustainability and efficiency. For example, fuel management systems are integrated into locomotives and draw on data about topography, track curvature, etc., providing the engineers with real-time instructions on how to operate the train to gain maximum fuel efficiencies that can net up to a 14 percent increase in fuel efficiency. The most advanced locomotives, Tier 4s, include hundreds of sensors that generate thousands of data points about the performance of the locomotives. That data is monitored from operations centers that alert the railroad of performance issues when necessary. These technologies reduce diesel locomotives' particulate and nitrogen oxide emissions by as much as 90 percent and 80 percent, respectively.¹³

The industry is also pursuing initiatives to reduce emissions in freight rail yards. This includes technologies that turn off locomotives that have idled for too long or automatically restart it if temperatures are low. Small diesel engines also may be used to keep the main locomotive engine warm when it is powered down to prevent freezing. These technologies reduce fuel that is wasted while locomotives idle.¹⁴

Federal Funding Opportunities

The short line and regional railroads, and any rail carrier (including Class Is) in partnership with at least one state entity, public agency, and/or local government, are eligible for grants under the FRA's Consolidated Rail Infrastructure and Safety Improvements (CRISI) grant program.¹⁵ These discretionary grants fund projects that improve the safety, efficiency, or reliability of freight (and passenger) rail transportation systems. Activities eligible for CRISI funds include capital projects that improve short line and regional railroad infrastructure; highway-rail grade crossing improvements projects; and rail line relocation and improvement projects, among others. The maximum Federal share of total project costs under the program is 80 percent. The Fixing America's Surface Transportation Act (FAST Act) (P.L. 114-94) authorized CRISI at \$255 million in Fiscal Year 2019 and \$330 million in Fiscal Year 2020. In addition, the Short Line Tax credit, known as

¹⁰ Association of American Railroads, Freight Railroads Help Reduce Greenhouse Gas Emissions, April 2019, Available at <https://www.aar.org/wp-content/uploads/2018/07/AAR-Railroads-Greenhouse-Gas-Emissions.pdf>.

¹¹ *Id.*

¹² U.S. Environmental Protection Agency (2019, April). Inventory of U.S. Greenhouse Gas Emissions and Sinks. Publication No. EPA 430-R-19-001. Accessible at: <https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf>, page 38.

¹³ Association of American Railroads, Putting Technology to Work, How Freight Rail Delivers the 21st Century, Available at <https://www.aar.org/wp-content/uploads/2018/05/RailxTech-AAR-White-Paper-Final-Web.pdf> Page 6.

¹⁴ *Id.* at 7.

¹⁵ 49 USC Section 24407. In addition to short line and regional railroads, states, Amtrak and other intercity rail passenger transportation provider, the Transportation Research Board, and others are eligible for CRISI.

45G, allows a credit of 50 cents for each dollar short line railroads invest in track and bridge improvements, up to \$3,500 per mile. The credit, first enacted in 2005, expired in December 2017.

The Railroad Rehabilitation and Improvement Financing (RRIF) program offers long-term, low-interest loans for improving rail infrastructure. Eligible recipients include railroads, state and local governments, government-sponsored corporations, and joint ventures that include at least one railroad. RRIF-eligible projects include the following: acquiring, improving, and rehabilitating track, bridges, rail yards, buildings, and shops; preconstruction activities; positive train control (PTC); transit-oriented development projects; and new rail or intermodal activities. Under this program, the U.S. DOT is authorized to provide direct loans and loan guarantees up to \$35 billion to finance development of railroad infrastructure. To date the RRIF program has provided \$6.286 billion in financing since 2002. There is currently about \$30.2 billion available in loan authority under the RRIF program.¹⁶

Trucking

Freight moves by truck on more than four million miles of public roads (including 223,000 miles on the National Highway System) and 616,000 bridges. The trucking industry is made up by over 700,000 trucking companies and more than 3.5 million commercial drivers.¹⁷

Volume of Freight Moved by Truck

Trucks carried 11 billion tons of freight in 2017¹⁸, and trucking accounts for approximately 72 percent of all freight tonnage by value and 66 percent by weight.¹⁹ According to the Bureau of Transportation Statistics, long-haul freight truck traffic is projected to increase “dramatically” on the National Highway System over the next three decades, from 311 million miles per day in 2015 to 488 million miles per day by 2045.²⁰

In recent years, online retail has fundamentally changed how products are purchased and distributed. According to the U.S. Census Bureau, e-commerce sales have grown from just over 4 percent of total retail sales in the first quarter of 2010 to over 11 percent of total retail sales in the third quarter of 2019.²¹ From 2014 to 2018, e-commerce increased by 69 percent to \$505 billion, and is expected to increase another 39 percent by 2022, to \$706 billion.²² As a result of this trend, the demand for freight movements by truck, and the requirement for more timely and efficient deliveries, have grown significantly. This has also prompted changes to supply chains and increased the focus on last-mile delivery of freight, particularly in congested urban centers.

¹⁶ RRIF was originally established by Congress in Title V of the Railroad Revitalization and Regulatory Reform Act of 1976 and later amended in the Transportation Equity Act for the 21st Century.

¹⁷ <https://www.census.gov/library/stories/2019/06/america-keeps-on-trucking.html>.

¹⁸ BTS, Freight Facts and Figures, (<https://data.transportation.gov/stories/s/Moving-Goods-in-the-United-States/bcyt-rqmu>).

¹⁹ TRIP, p.17.

²⁰ Bureau of Transportation Statistics, “Freight Transportation System Extent and Use” (<https://data.transportation.gov/stories/s/Freight-Transportation-System-Extent-Use/r3vy-npqd>).

²¹ U.S. Census Bureau, Quarterly Retail E-Commerce Sales, 3rd Quarter 2019 (https://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf).

²² TRIP, “America’s Rolling Warehouses: Opportunities and Challenges with the Nation’s Freight Delivery System”, October 2019, p 4.

Environmental Impacts

Medium and heavy-duty trucks contributed 23 percent of all transportation-related greenhouse gas emissions in 2017, and 6.7 percent of total U.S. greenhouse gas emissions in 2017.²³ Greater congestion on roadways can exacerbate idling, emissions, and increase fuel use. More than two out of every five miles of America's urban interstates are congested.²⁴ Congestion cost the trucking industry \$74.5 billion in 2017, \$66.1 billion of which occurred in dense urban areas.²⁵ The cost of congestion for truck drivers grew by 40 percent between 2012 and 2017, compared to a 14 percent increase in congestion costs for non-commercial drivers.²⁶

Federal Funding & FAST Act Freight Provisions

Federal investments in roads and bridges are funded through Federal excise taxes levied on motor fuels (gas and diesel) and on related products such as tires, which are deposited into the Highway Trust Fund (HTF). Congress has not adjusted these taxes on gas and diesel since 1993, and the purchasing power of these taxes have fallen over 40 percent in the last 25 years. Improved vehicle fuel efficiency, due to higher Corporate Average Fuel Economy standards required by law, has further eroded Federal revenues. As a result, revenues coming into the HTF have not kept pace with expenditures from authorized programs. Congress has had to transfer \$144 billion from the General Fund and other funds to keep the HTF solvent since 2008. The Congressional Budget Office (CBO) estimates that over the next 10 years, the HTF will fall \$171 billion short based on continuing currently-authorized highway, transit, and safety program levels. An additional \$5 billion is necessary to ensure that there is a prudent balance in the HTF, which brings the shortfall to \$176 billion. This does not include any higher investment levels to meet growing surface transportation needs.

According to U.S. DOT's *Conditions & Performance Report*, there is a \$836 billion backlog of unmet capital investment needs for highways and bridges²⁷. One in three interstate U.S. bridges have repair needs, and over 47,000 of the nation's bridges are structurally deficient.²⁸ Nearly one out of every five miles of highway pavement is in poor condition nationwide.²⁹

The FAST Act, the last major surface reauthorization bill enacted by Congress in 2015, included several provisions to support and invest in the movement of freight.

The FAST Act established a new formula program to fund surface transportation freight improvements and provided \$6.3 billion over the five-year bill. States may use the funds for a variety of projects related to freight movement for road and bridge segments in States that are designated on the National Highway Freight Network. Up to 10 percent of the funds each year may be used for

²³ U.S. Environmental Protection Agency (2019, April). Inventory of U.S. Greenhouse Gas Emissions and Sinks. (<https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf>).

²⁴ ASCE Report Card, 2017.

²⁵ "Cost of Congestion to the Trucking Industry." *American Transportation Research Institute*, Oct. 2018. <https://atri-online.org/wp-content/uploads/2018/10/ATRI-Cost-of-Congestion-to-the-Trucking-Industry-2018-Update-10-2018.pdf>.

²⁶ Texas A&M Transportation Institute, Urban Mobility Report 2019, <https://mobility.tamu.edu/umr/>.

²⁷ U.S. DOT, 2015 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance.

²⁸ ARTBA Bridge Report, 2019 (<https://artbabridgereport.org/>).

²⁹ U.S. DOT, 2015 Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance.

freight intermodal or freight rail projects, including projects within the boundaries of public and private freight rail and port facilities and projects that facilitate intermodal operations.

The FAST Act also created a new competitive grant program, providing \$4.5 billion over the life of the bill, to assist states in funding nationally-significant highway, bridge, and freight projects. The Nationally Significant Freight and Highway Projects program (referred to as INFRA by this Administration and FASTLANE by the previous Administration) is generally aimed at large-scale and multi-jurisdictional projects that cannot be funded with highway funding apportioned to the states. At least 25 percent of the funding is reserved for projects in rural areas, and 10 percent of the funding are reserved for smaller projects (project costs of less than \$100 million). Up to \$500 million over the life of the FAST Act may be used to fund freight rail or intermodal projects if the projects will significantly improve freight movements on the National Highway Freight Network.

The FAST Act modified the National Highway Freight Network established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) (P.L. 112-141) to specify that the core portion of the network will be comprised of a 41,518-mile highway network previously identified by the U.S. Department of Transportation. The FAST Act allowed States and metropolitan planning organizations to add to the network by designating urban and rural freight corridors. The FAST Act also encouraged each State to establish a freight advisory committee and required each State to develop a comprehensive freight plan, which can be done separately or incorporated into the State's transportation improvement plan (STIP).

In addition, the FAST Act established goals for a national multimodal freight policy and directed the Secretary to develop a National Multimodal Freight Network. U.S. DOT issued an Interim Network, published in the Federal Register, on June 6, 2016, and re-opened the comment period through February 22, 2018, in a notice published on October 25, 2017, but has not finalized the Network.

U.S. DOT was also required to develop a national freight strategic plan to identify bottlenecks on the multimodal freight network, including the cost to address each bottleneck and strategies to improve intermodal connectivity. U.S. DOT issued a draft plan for comment in December 2015.³⁰ The Strategic Plan has not yet been finalized. The draft plan identified several key trends and challenges facing the U.S. freight transportation system, including:

- High expected growth in freight traffic over the next three decades
- Underinvestment in the freight transportation system
- Difficulty of planning and implementing freight projects under current Federal programs
- Safety and security concerns with freight movement and facilities
- Impacts on our system of increasing international trade
- New technologies are revolutionizing freight movements

³⁰https://www.transportation.gov/sites/dot.gov/files/docs/DRAFT_NFSP_for_Public_Comment_508_10%2015%2015%20v1.pdf

WITNESS LIST

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