

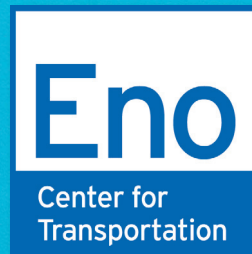
Delivering the Goods:

Recommendations for
Funding a Federal
Freight Program



FREIGHT

WORKING GROUP



May 2016

Delivering the Goods:

*Recommendations for Funding a
Federal Freight Program*



© 2016 Eno Center for Transportation

1710 Rhode Island Ave., NW
Suite 500
Washington D.C. 20036

Phone: 202-879-4700
Email: publicaffairs@enotrans.org
Twitter: @EnoTrans
www.enotrans.org

Delivering the Goods:

Recommendations for Funding a Federal Freight Program

Research Report and Recommendations

Freight Working Group Co-Chairs:

Senator Norman Coleman

Governor James Florio

Majority Leader Richard Gephardt

Freight Working Group Members:

Thomas F. Jensen, UPS

Mike Steenhoek, Soy Transportation Coalition

Annie Nam, Southern California Association of Governments

Chuck Baker, National Railroad Construction and Maintenance Association

Harris County Judge Ed Emmett, Texas Department of Transportation

Brian Pallasch, American Society of Civil Engineers

Leslie Blakey, Coalition for America's Gateways and Trade Corridors

Allison Yoh, Port of Long Beach

Alejandro Solis, HDR

Paul Bea, PHB Public Affairs

David Nice, Washington State University

Gerry Stoughton, Stoughton Consulting, LLC

Jack Basso, Peter J. Basso and Associates

Maria Boile, University of Piraeus and Center for Advanced Infrastructure and Transportation

Teresa Brewer, Municipality of Anchorage, Alaska

Mort Downey, Mort Downey Consulting, LLC

Gen Giuliano, University of Southern California

Norman Mineta, Mineta and Associates, LLC

Anne Strauss-Wieder, A. Strauss Wieder, Inc.

Adie Tomer, Brookings Institution

Tay Yoshitani, Port of Seattle and Eno Center for Transportation Board of Directors

Gene Pentimonti, Maersk (retired) and Eno Center for Transportation Board of Directors

Lillian Borrone, Eno Center for Transportation Board of Directors Chair

Lead Author: Paul Lewis, Eno Center for Transportation

Contributors: Elizabeth Bastian, Robert Puentes, Joshua Schank

Table of Contents

Executive Summary.....1

1. Background.....4

2. Description of a multi-modal, competitive freight program.....6

3. Initial Examination of Funding Options.....12

4. Discussion of potential funding mechanisms.....17

5. Analysis and Recommendations.....33

APPENDIX: Members of Select Freight Policy Groups.....37

Endnotes.....40

Executive Summary

The 2015 federal surface transportation reauthorization, the Fixing America's Surface Transportation (FAST) Act, took a crucial step in creating a national freight program; but there is room for improvement. In particular, the United States needs to expand the size of the national freight program and enhance the multimodal nature of the program.

This report focuses on finding a funding source for expanding and improving such a program. It does not focus on other federal freight policy components, such as safety regulation or work rules, nor does it focus on improving the status of existing trust funds. Instead these recommendations are for funding, which is an issue that all of the previous research and attempts at consensus building in this area has failed to deal with effectively.

To work on the challenging funding problem, the [Eno Freight Working Group](#) brought together numerous freight industry stakeholders, experts and thought leaders to develop consensus around a specific recommendation for a funding source for a multimodal freight investment program at the federal level. The group also interviewed, researched, and met with other industry experts to help inform and shape the final recommendations.

After much consideration, the group developed a recommendation for funding the program. It should be emphasized that none of the funding mechanisms evaluated proved perfect - all approaches have challenges. The consensus recommendation is based on the Eno Freight Working Group's assessment that these options are the most equitable and least onerous, and the need to have a federal discretionary grant program with dedicated funding trumps the downsides of the recommended mechanisms.

Based on the research and analysis presented in this report, the Working Group developed the following recommendation:

[Congress should appropriate general fund revenues for a national multimodal freight discretionary program.](#) Although a program supported by general funds may not provide as much long-term certainty as a dedicated revenue source, such a program has several advantages. First, general funds are not subject to "return-to-source" claims in which freight modes and geographies would want to see their portion of the funding returned directly to them in project grants. Second, the freight industry supports the entire national economy, so using general funds to make freight system improvements, as is common in other countries, is justifiable. Finally, the general fund option provides the ability to fully fund the program immediately while a long-term funding source can be developed. General funds were used to pass the FAST Act and reauthorize initiatives such as

the Transportation Investment Generating Economic Recovery (TIGER) program. Since Congress has shown a recent willingness to support transportation programs with general funds, the Eno Working Group supports a recommendation of a general funded grant program using the following features to aid in drafting legislation:

- Increase the total funding of the freight discretionary grant program included in the FAST Act to at least \$2 billion annually, with the ability to increase funding as the program becomes established.
- The general funded discretionary grant program should expand on the freight grant program passed in the FAST Act and make it fully multimodal in nature.
- Use a distribution mechanism that can provide funding stability for large, complex projects that can take several years to complete.

In the long term, Congress should authorize the implementation of a cost of freight shipment (COFS) fee dedicated to a national freight discretionary grant program.

A COFS fee would assess a small percentage on the cost of shipping for all surface transportation movements. This has several advantages over the other revenue raisers analyzed in this report. For one, it would not disproportionately affect a particular freight mode and it would continue to grow along with the demand for goods movement services. There are still issues that need to be worked out with respect to the administration and management of such a fee, but the groundwork can begin now to ensure a smooth implementation. While the exact details of a COFS fee still need to be developed, Eno's Freight Working Group recommends that Congress consider the following principles:

- The fee should be assessed on the cost of shipping for all surface transportation modes at a rate of at least 0.3 percent.
- The fee should be charged to owners of freight cargo at an even rate across modes so that no mode is disproportionately affected.
- Congress should dedicate 100 percent of the net revenues of this fee to the federal freight discretionary grant program, and U.S. DOT should be required to spend the balance of this fund each year for the program as described above.
- International portions and flight portions of shipments should be exempt from the fee.
- The Internal Revenue Service, or any administrative entity, must create a reporting system that is fair and straightforward for payment of the fee. Special care must be made to ensure that the administrative burden is minimal to shippers, cargo owners, and other users of the freight system.
- Private fleets and other shippers should be subject to the fee and required to submit payment within the same context as other freight, but their reporting requirements must also be simple and streamlined.

- Industry groups and shippers should have input and engagement in the administration of the system so that it is workable.

The research and analysis used to inform these recommendations are based on consensus among a diverse group of industry participants. It is the Eno Working Group's hope that this can lead to full and long term funding of a critical element of American economy: a federal multimodal freight discretionary grant program.

1. Background

The 2015 federal surface transportation reauthorization, the Fixing America's Surface Transportation (FAST) Act, took a crucial step in creating a national freight. This was in part the result of an extensive, long-term discussion regarding the need to develop a national program of investment in freight and goods movement.¹

The creation of the FAST Act's "Nationally Significant Freight and Highway Projects" (NSFHP) was a key component of the proposed national freight policy. The NSFHP, operating under U.S. DOT as the "Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies" (FASTLANE) grant program, will provide funds for highway and intermodal freight projects around the country, and was funded at approximately \$800 million annually through 2020. While this is a significant step in creating a useful federal freight program there is ample room for improvement. Not only is the program essentially for highway projects only (with a small portion set-aside for possible rail, intermodal, and other freight projects), further expansion and continuation of the program will require sufficient long-term funding.

In order to ensure the success of our freight infrastructure, the United States needs to expand the size of the national freight program, enhance the multimodal nature of the program, and find dedicated funding. This is based on consensus developed in the policy community for years and can bring real benefits to the national economy.

The FAST Act used large general fund offsets to fund NSFHP/FASTLANE through the federal Highway Trust Fund (HTF). Despite the inclusion of the program, funding will likely need to be increased to make significant progress toward delivery of large infrastructure projects and there will be challenges for long-term sustainability once funding runs out in 2020 at the expiration of the law. Now is

This report is not intended to justify the need for a federal freight program, outline the benefits that such a program could bring, or recommend the best structure for the federal program. These topics have been extensively researched by think tanks, industry groups, and research organizations alike.

This report reflects the consensus that a new freight program should have dedicated funding of at least \$2 billion annually. It is not a needs-based assessment, but a figure designed to illustrate a comparison to other federal programs and an estimate of funding to make a difference in large-scale projects. It is important for this paper in order to determine the magnitude of potential funding sources.

the time to begin laying the groundwork for the next bill to ensure the program is effective and robust.

Existing federal policy and recent reports contain numerous ideas about the overall direction and specific funding for future freight transportation, ranging in scope from ambitious to incremental. This research updates and analyzes these proposals in order to understand their tradeoffs and develop consensus for the kind of funding mechanism that a multimodal freight program needs to move forward.

Other organizations and experts have identified possible sources of funds, weighing their advantages and disadvantages, but none have endorsed a specific funding source. This report, developed under the purview of Eno's Freight Funding Working Group, discusses several funding options, weighs the costs and benefits of each, and ultimately presents a recommendation to be considered as the funding mechanism for a long term, sustainable multimodal national freight program.

To inform this report, the Eno Freight Working Group brought together numerous freight industry stakeholders, experts, and thought leaders. Former Minnesota Senator Norm Coleman, former New Jersey Governor Jim Florio, and former Majority Leader Richard Gephardt serve as co-chairs for the Working Group. It includes representatives from the trucking, shipping, ports, government, freight and research community.

2. Description of a Multi-modal, Competitive Freight Program

In order to investigate funding sources, it is important to first understand what needs to be funded. This section reviews the current federal freight program as passed under the FAST Act, and reviews recommendations from stakeholder groups that have proposed a multimodal freight program over the past decade. It concludes by reviewing how the existing freight program should expand and improved.

The FAST Act, signed by President Obama in December 2015, created a new discretionary grant program for the Secretary of Transportation to fund freight projects: the “Nationally Significant Freight and Highway Projects” (NSFHP) Program or as named by U.S. DOT, “Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies” (FASTLANE) grant program. This program is intended to help states, localities, and other entities overcome funding barriers to complete projects of national or regional significance. The program is funded at \$800 million annually, increasing to \$1 billion annually by 2020. Eligible projects must be highway freight projects on the National Highway Freight Network, highway or bridge projects on the National Highway System (NHS), intermodal facilities or railroad grade crossings, although intermodal projects are capped at a total of \$500 million over the life of the bill.

The U.S. DOT began soliciting applications for grants under FASTLANE in 2016. The program is administered through the Office of the Undersecretary for Policy and is expected ultimately to be housed in the new National Surface Transportation and Innovative Finance Bureau, also created under the FAST Act, in order to emphasize its multimodal nature.

The program supports a broad range of potential applicants, including states or groups of states, metropolitan planning organizations, municipal governments, special purpose districts (including ports), federal land agencies, Indian tribes, or combinations of these groups. The minimum federal grant size is \$25 million, but some money is reserved for smaller projects and 25 percent of the total awards must be in rural areas. Importantly, the program encourages the leveraging of local funding and restricts the federal share of project costs to 60 percent. The U.S. DOT must give the Congressional transportation committees 60 days notice of the proposed grants.

2.1 Existing Recommendations for a Federal Freight Grant Program

Several groups have released consensus-based framework recommendations for a national freight policy. These proposals were created prior to the FAST Act, but they all indicate room for improvement in the existing law.

National Freight Advisory Committee

The U.S. DOT set out to create recommendations for a federal freight policy through the National Freight Advisory Committee (NFAC). In July 2014, NFAC delivered 81 full-consensus recommendations for a National Freight Strategic Plan (see the Appendix for a full list of the members that approved these recommendations). The NFAC consists of 47 members representing “members from all modal carriers, operators of infrastructure, units of government, labor organizations, academia, and public interest groups.”²

These recommendations address a wide range of freight-related concerns including safety, security, streamlining, data, research, regulation, and enforcement. The NFAC report also repeatedly mentions that any freight policy should reflect the multi-modal nature of the freight network. The benefit of these recommendations is that they are either no cost or low cost ways to improve the freight system. The NFAC recommendations involve two components:

The first is a need to reinvest in the maintenance of the existing system and bring it to a state of good repair. The recommendations specifically address the need for bolstering the HTF, Inland Waterways Trust Fund (IWTF), and the Harbor Maintenance Trust Fund (HMTF). Basic maintenance and operations of key infrastructure are critical and the industry agrees that strengthening the various trust funds is the foundation for the system investment.

The second is for new, transformational investments, as articulated in NFAC Recommendation B8 and C4:

Recommendation B8: Create a new dedicated fund for multi-modal freight projects. First and last mile segments of regional and national significance must be included in a comprehensive freight funding program to assure freight movement is seamless across jurisdictions, modes, ports, and intermodal connectors.

Recommendation C4: A U.S. DOT discretionary and formula grant program that includes first and last mile connector projects. This funding must have broad eligibility, including both rural and urban connectors, as well as non-NHS mileage. Experience under the U.S. DOT Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant Program is a good example of this type of funding. For example, in 2010 the Port of Miami received almost \$23 million (out of about \$47 million) to establish a first and last mile intermodal container rail service. Over the next 20 years, this service will facilitate 6 million first and last mile short-line rail trips between the port and the Hialeah Rail Yard.

The NFAC report did not recommend how it would fund such a program.

[Freight Stakeholders Coalition](#)

The industry-led Freight Stakeholders Coalition released a nine-point platform in 2014.³ Though no railroad representative signed the report, many of its recommendations are similar to NFAC and other groups' recommendations (see Appendix for a full list of the signing coalition members).

The platform recommends several low-cost freight policy initiatives including establishing a multi-modal freight office within the Office of the Secretary (OST) at U.S. DOT, and supporting multi-state freight corridor planning efforts. Similar to the NFAC, the platform values "ensuring both long-term HTF solvency, as well as with new and additional non-HTF funding dedicated to prioritizing projects that optimize and integrate the nation's freight transportation system." The platform specifically mentions Projects of National and Regional Significance (PNRS) among other multi-modal grant and credit programs, which can invest in "intermodal connectors into freight terminals and projects that support national and regional connectivity."

The Freight Stakeholders Coalition did not recommend how to fund a PNRS freight program.

[Advisory Committee on Supply Chain Competitiveness \(ACSCC\)](#)

The U.S. Department of Commerce created a 45-member advisory committee to help provide the Secretary of Commerce with detailed advice on ways to promote economic, export, and job growth goals.⁴ The ACSCC, which includes railroad, trucking, aviation, shipping, and other industry groups, released several recommendations in September 2014. (See Appendix for full committee listing.)

The first recommendation of the committee is that the United States should "make strategic investments in the U.S. freight transportation system to improve the competitiveness of U.S. supply chains."⁵ The group recommended evaluating these investments through mode-neutral performance measures, including travel time, travel time reliability, and cost. As part of this effort, they advise both shoring up the various trust funds for routine investment and creating two programs for targeted investments, with a TIGER-like program for small and mid-sized improvements and a PNRS-like program for the largest investments with broad modal eligibility.

In the near-term, the ACSCC recommends using general funds to support the investment programs (aside from trust fund-based investment). Over the long term they recommend creating a Freight Trust Fund supported by user-based revenues. The committee suggests, "The federal portion should not be less than \$2 billion annually."⁶

The ACSCC did not recommend a specific user fee to fund their proposed freight program.

[House Transportation and Infrastructure Panel on 21st Century Freight Transportation](#)

In 2013 the House of Representatives Committee on Transportation and Infrastructure (T&I) commissioned a panel on freight transportation.⁷ The panel, consisting of 12 House members, held six public hearings, three roundtable discussions, toured freight facilities around the country, and held numerous briefings with freight industry professionals and other interested parties. The panel's October 2013 report "Improving the Nation's Freight Transportation System" provided an overview of this exploration of freight transportation in the United States and gave several recommendations for freight policy.

Aside from a general agreement with safety and other regulatory components of federal freight policy, the T&I report offered two key recommendations that relate to investment programs:

Ensure robust public investment in all modes of transportation on which freight movement relies.

Authorize dedicated, sustainable funding for multimodal freight PNRs through a grant process and establish clear benchmarks for project selection. Projects eligible for such funding would have a regional or national impact on the overall performance of the multimodal freight network identified by the Secretary of Transportation.

The report examined four freight-related charges to generate revenue for freight projects - customs and duties fees, freight waybill fee, weight-distance tax, and container tax - and discussed advantages and drawbacks of each charge.

The T&I Committee did not endorse a specific fee or charge.

[Coalition for America's Gateways and Trade Corridors \(CAGTC\)](#)

Other previous reports on surface transportation policy made specific suggestions for multimodal freight programs. The Coalition for America's Gateways and Trade Corridors (CAGTC) was established with the sole purpose of raising public recognition and Congressional awareness regarding the need to expand U.S. freight capacity and to promote sufficient funding in federal legislation for trade corridors, gateways, intermodal connectors, and freight facilities. In their years of freight research and advocacy, they have pushed Congress to create a "new, multimodal, federally-driven freight strategy. Their Reauthorization Platform, published in 2014, specifically recommends the following:

Authorize dedicated, sustainable funding for multimodal freight PNRs, or a similar freight infrastructure program, through a competitive grant process and establish clear benchmarks for project selection. PNRs assists in funding large-scale infrastructure projects, frequently multimodal and crossing jurisdictional borders, which are difficult to fund through traditional distribution methods such as formula programs.⁸

CAGTC did not recommend a specific funding mechanism for a national freight program, but did support the general notion of a freight user fee.

Others

The National Surface Transportation Infrastructure Finance Commission (NSTIFC) was established to study the future of surface transportation funding. The Commission's 2009 report consisted of a broad range of recommendations based primarily on the user-pay principle.⁹ It also recommended potential revenue sources for freight-related activities. A "short-list" of options was evaluated for revenue potential, feasibility of implementation, and economic benefits. The options evaluated were: existing federal truck-related taxes, customs duties and fees, freight waybill fee, weight distance tax, container tax, and harbor maintenance tax.

The NSTIFC report did not endorse a specific mechanism for a freight program.

A 2008 U.S. Government Accountability Office (GAO) report examined ways that national policy could improve freight mobility.¹⁰ Increased demand for freight transportation, limitations on the nation's ability to expand freight capacity within its existing transportation network, and the inefficiencies within the sector were all cited as severe challenges that the freight network will have to overcome. The GAO recommended that U.S. DOT, Congress, and stakeholders develop a strategy to transform the federal involvement in freight transportation projects. The GAO proposes some general strategies for improvements but stops short of making recommendations.¹¹

GAO has not endorsed a specific mechanism for a freight program.

The Bipartisan Policy Center's (BPC) 2009 surface transportation report "Performance Driven: Achieving Wise Investment in Transportation" recommended a structural overhaul and consolidation of the nation's federal surface transportation programs. Along with proposals to eliminate several duplicative and unnecessary federal transportation programs, the report recommends the creation of a new "Freight Transportation Improvement Program" that would consolidate related existing programs into a competitive, mode-neutral discretionary grant program targeted to freight investments.¹² BPC proposed to fund the new discretionary freight program through a "new fee on

freight movements" as well as other transportation-related fees and some general funds.

BPC did not recommend a specific user fee for a national freight program.

A February 2015 Brookings Institution report, "Establish a National Freight Investment Program to Improve Trade and Economic Performance," outlined a detailed vision for a multimodal freight program. This report proposed a 5-year national freight investment program funded at \$11.1 billion, or \$2.2 billion annually. The investment program has both formula and discretionary components, and also highlights specific selection criteria, performance metrics, and set-asides for rural and innovation projects. The report pointed out that the revenue and funding sources are important but beyond the scope of work, citing full support for "general fund or user fee revenues dedicated sole to freight projects."¹³

Brookings did not recommend a specific fee or general fund source.

The American Association of State Highway and Transportation Officials' (AASHTO) "Matrix of Illustrative Surface Transportation Revenue Options," published in 2014, outlines current and potential revenue sources for surface transportation. The report examines some specific freight user fees and sources, highlighting their pros, cons, and political acceptability. The matrix also estimates assumed revenue yield for specific fee rates.¹⁴

AASHTO did not recommend any specific fee for surface transportation or freight.

2.2 The Consensus that Exists

These examples demonstrate that there is broad consensus from all aspects of the freight industry, government, and elsewhere that there is a need for a multi-modal federal investment program that can target funding to projects that have national implications on our freight system. The summary of this consensus, as it relates to the existing program under the FAST Act, is:

- The federal government should maintain a PNRS or TIGER-like program that competitively allocates funding to projects that have regional or national significance on our freight system.
- The program should have a multi-modal approach and be mode-neutral in its selection, which means expanding the existing eligibility to include more rail and port infrastructure as well as reducing the limits on intermodal infrastructure.
- The program should expand its funding beyond the \$800 million annually currently approved through 2020 to have consistent, dedicated funding of at least \$2 billion annually.

This report focuses on finding a funding source for such a program. The federal grant program considered in this report does not focus on other federal freight policy components, such as safety regulation or work rules, nor does it focus on improving the status of existing trust funds. Instead it tackles the one issue that all of the previous research and attempts at consensus building in this area have failed to deal with effectively: funding.

3. Initial Examination of Funding Options

When evaluating a funding source, this research examines the following categories as they pertain to the freight system:

- How closely does the funding source relate to the freight network?
- Which users are most affected by the funding source?
- What are the long-term prospects for the funding source?
- What is the revenue-raising ability of the funding source?
- How easy is it to administer and collect the funding source?
- What is the likely political acceptability of the funding source?

This section analyzes a broad range of possible funding sources for a freight program. These are grouped in four categories: sources from fuel, sources from use and equipment, sources from freight movement, and sources from non-user-based funds.

Table 1: Funding Sources from Fuel

Funding Sources	Mode	Current Tax Rate Structure	Expected Rate Increase to Raise \$2 Billion Annually
Diesel Fuel Tax (trucks, barges, railroads)	Multimodal	Existing per-gallon tax for trucks and barges (see table 5), no federal diesel tax for railroads	New/additional 4.2 cents/gallon tax
Motor Fuel Tax - Highway Diesel	Truck	\$0.24/gallon	\$0.05/gallon
Motor Fuel Tax - Railway Diesel	Rail	n/a	\$0.56/gallon
Motor Fuel Tax - Barge Diesel	Barge	2014 rate of \$0.29/gallon	\$4.89/gallon
Sales Tax (highway diesel)	Truck	Federal: \$0.24/gallon	2.5% tax on average \$2.10 per gallon (April 2016 price)

Fuel funding sources have long served as revenues for federal transportation investment, constituting the primary source of funds for the Highway Trust Fund (HTF) and the Inland Waterways Trust Fund (IWTF).¹⁵ Diesel is the primary source of fuel for freight movement for trucks, barges, and railways, making it a proxy for use of the freight system.¹⁶ With the exception of railway fuels, diesel is already subject to a federal tax and from an administrative perspective, increasing it is relatively straightforward. In the long term, funding sources from fuel pose a risk for trust fund solvency as fuel consumption has stagnated and could decline with increased use of natural gas vehicles and increased fuel economy. However, a recent increase in the barge diesel tax suggests possible acceptability by Congress and the industry for a dedicated increase to transportation investment.

Given that the purpose of a national freight program is to support a multimodal network, it would be infeasible to select a funding source from one mode alone unless the other modes are represented in other contributing sources. No one mode is likely to agree to fund all the others. Therefore, we only considered a fully multimodal diesel tax as an alternative.

Table 2: Funding Sources from Use and Equipment

Funding Sources	Mode	Current Tax Rate Structure	Expected Rate Increase to Raise \$2 Billion Annually
Heavy Vehicle Use Tax (annual fee)	Truck	Between 55,000-75,000lbs: \$100 plus \$22 per 1,000 lbs over 55,000lbs; over 75,000lbs, \$550	Increase current tax by 180%, eliminate cap (structure not defined)
Sales Tax: Trucks and Trailers	Truck	12%	Increase existing rate by 60% to 20% tax
Tire Tax (trucks)	Truck	\$0.945 for each 10lbs of max. rated load capacity over 3,500lbs	Increase by 500%
Harbor Maintenance Tax	Port	0.125% on value of commercial cargo (non-export)	Increase by 116%
Registration Fee (trucks)	Truck	Varies by state	Add \$184.05
Vehicle Miles Traveled Fee (trucks)	Truck	n/a	Apply \$0.01/truck vehicle mile traveled on all roads
Sales Tax (auto-related parts and services)	Truck	12%	Increase by 0.9%

Funding sources from use and equipment also supports existing trust funds, although in the case of the HTF these are a small percentage of overall revenues. The largest issues facing these funding sources is that they tend to be modal in nature, and they would need to be increased significantly to fully fund the proposed \$2 billion program. While it would be possible to create a recommendation that supports increasing and dedicating several of these sources for a discretionary program, this is politically unrealistic. But even if it was possible, any increase to these fees would more likely to be used to support ongoing programs such as the HTF.

Germany and Austria have had successes with distance-based vehicle mile travelled (VMT) fees that assess fees on a vehicle user based on the roads and conditions on which they travel. While applicability and support in the U.S. is limited, it is growing. Nevertheless, the U.S. trucking industry has already come out strongly against any toll or VMT fee.¹⁷

Table 3: Funding Sources from Freight

Funding Sources	Mode	Current Tax Rate Structure	Expected rate increase to raise \$2 billion annually
Cost of Freight Shipment fee, (all modes, estimated using "waybill" fee as proxy)	Multimodal	n/a	0.3% of shipment cost
Freight charge (by ton, all modes)	Multimodal	n/a	\$0.14/ton of domestic shipments
Freight charge (ton-mile, all modes)	Multimodal	n/a	\$0.0006/ton-mile of domestic shipments
Container Tax	Multimodal	n/a	\$45/container (Twenty foot equivalent unit)
Freight Bill (truck only)	Truck	n/a	0.35% of shipment cost
Freight charge (by ton, truck only)	Truck	n/a	\$0.17/ton of domestic shipments
Freight charge (ton-mile, truck only)	Truck	n/a	\$0.001/ton-mile of domestic shipments

Funding sources from freight movement would be all new fees that have not yet been applied. Depending on the source, these taxes or fees could be levied on the cost of shipment, the weight, the weight and distance, or on containers. Each has experienced significant and continued growth over the past few decades, so the revenue raising potential and the long-term sustainability are positive. These charges could have a distorting effect on the freight industry. For example, the charges by ton or ton-miles would disproportionately affect bulk freight or freight that traveled longer distances. The cost of freight shipment fee (COFS) would be a percentage change assessed on the cost of surface transportation shipments. This goes beyond a "waybill" fee in that it would apply to all shipments, whether they produce a physical waybill or not. On this basis, the cost of shipment fee was selected for further review.

Table 4: Funding Sources from Non User-Based Fees

Funding Sources	Mode	Current Tax Rate Structure	Expected Rate Increase to Raise \$2 Billion Annually
Value Added Tax (national sales tax)	Multimodal	n/a	0.04% tax
Internet Sales Tax	Multimodal	n/a	0.77% tax
Corporate Income Tax	Multimodal	Base rate of 39%, with several exemptions	Increase by 0.62%
Personal Income Tax	Multimodal	Varies by individual	Increase or dedicate 0.15%
Carbon Tax	Multimodal	n/a (proposals in the range of \$5 to \$50/ton)	\$0.32 cents/ton
General Fund Transfer	Multimodal	n/a	\$2 billion

General funding sources would be a departure from the traditional dedicated, user-based excise tax nature of the federal transportation investment framework, but several discretionary programs, such as Transit New Starts and TIGER, are funded out of the general fund. Also, Congress has increasingly used general fund transfers to maintain current HTF spending levels, making non-user based funding sources worth reviewing.

4. Discussion of Potential Funding Mechanisms

The funding mechanisms the Eno Working Group determined to have the most potential were analyzed for their ability to provide a sustainable funding stream for a multimodal freight program. Those funding mechanisms are:

- An increase in the **diesel fuel tax** on trucks, barges, and railroads
- A new **cost of freight shipment fee** on all modes
- Several **non-user based** taxes

This section evaluates the benefits and challenges of each of these funding mechanisms from both political and policy perspectives.

4.1 Diesel Fuel Tax on Trucks, Barges, and Railroads

A straightforward way to raise \$2 billion for a federal discretionary grant program is to levy an additional per gallon tax on all diesel fuel and dedicate the revenues to the program. Diesel constitutes the vast majority of fuel for trucking, barges, and railroads. If uniformly charged on all diesel gallons at an additional 4.2 cents per gallon, the program would have sufficient funding to meet the \$2 billion target. This section details the benefits, drawbacks, and broader impacts of such a charge.

4.1.1 Impacts in the freight industry

While an increase in the diesel fuel tax for trucks, barges, and railroads would exclude any cargo shipped via aircraft, it *would* apply to nearly the entire domestic freight network.¹⁸ A tax on fuel is often used as a proxy for system use because the larger and heavier the freight, the greater the fuel use. Though this tax would be administered at the national level, it would likely be levied on top of the existing fuel taxes for both trucks and barges, making collection relatively simple. Railroads are not currently subject to a federal fuel tax and would need to have a similar taxation administration level for collection.

The truck and barge industries have been subject to fuel taxes since 1932 and 1978, respectively. The current tax on diesel fuel is 24.4 cents per gallon and 29 cents per gallon for barges, with other on-road fuels taxed at various levels. These revenues are deposited into the HTF and used for both federal surface transportation funding and mass transit.¹⁹ Nearly 95 percent of heavy-duty trucks use diesel fuel but medium duty trucks use more gasoline, with 72 percent using diesel.²⁰

Table 5: Current Federal Highway User Tax Rates by Fuel Type

Fuel	Tax rate (cents per gallon)
Gasoline	18.4
Gasohol	18.4
Diesel	24.4
Liquefied Petroleum Gas	18.3
Liquefied Natural Gas	24.3
Methanol	9.25
Compressed Natural Gas	18.3 (gallon gas = 126.67 cu. ft.)

Source: Internal Revenue Service, Quarterly Federal Excise Tax Return Form 720, April 2015.

Nearly every truck in the United States runs on diesel, consuming the majority of the 43 billion gallons of diesel consumed each year for transportation.²¹ While barges and railroads also use diesel as their primary motive fuel, the trucking industry would bear the largest tax burden of a diesel tax increase.

The politics underlying the trucking industry's large cost burden would likely have substantial policy implications. Because the trucking industry would be paying more into the program, they would likely want a larger share of the funding directly benefiting roads and trucking. A similar dynamic is seen within the HTF, where drivers bear a larger cost burden in comparison to transit, and road stakeholders feel as if they should receive a larger portion (if not all) of the revenues that flow into the HTF. In terms of the freight program, it would be challenging to neutrally distribute funding to all of the modes when not all of the modes are paying into the system equally.

At 4.2 cents per gallon, the tax would be a small increase on the current national average of total price at \$2.27 per gallon for trucks and passenger cars.²² For example, a typical 1000-mile truck trip currently costs about \$40 in fuel taxes. A 4.2 cent increase in the tax would increase the cost of such a trip by \$7, and even less for trucks with greater fuel efficiency (See Table 6). However, 4.2 cents is the minimum amount required to reach the \$2 billion mark; excise taxes would likely need to increase if Congress were to increase the size of the program. But to begin with the taxes would be relatively small. Indexing the diesel fuel tax to automatically increase with inflation would be an easy way to ensure steady revenues into the future, though such a policy may lessen the political feasibility of raising the tax in the first place.

Table 6: Additional Diesel Tax Cost Accrued per 1,000 Mile Truck Trip

Average Truck MPG	Existing Diesel Tax (24.4 cents per gallon)	New Diesel Tax (28.6 cents per gallon)
Average Truck Fleet (2014) 6mpg	\$40.67	\$47.67
Newer Trucks 10.7 mpg	\$22.43	\$26.73

Source: U.S. Department of Energy, "Energy 101: Heavy Duty Vehicle Efficiency," Office of Energy Efficiency and Renewable Energy, 2015.

In 2013, Class I railroad operating fuel expenses totaled \$11.6 billion on 3.7 billion gallons of fuel equating to approximately \$3.13 per gallon.²³ Applying the 4.2 cent per gallon tax to the 2013 numbers, the amount spent on fuel by the rail industry would increase by \$155 million annually, or 1.3 percent.

Since 1994, under the Water Resources Development Act of 1986 (WRDA), there has been a 20 cents per gallon fuel tax on commercial barge traffic on inland waterways.²⁴ This tax raised approximately \$100 million in FY 2013. Using the 2013 numbers (\$100 million / 20 cents per gallon = 500 million gallons used), a 4.2 cent per gallon tax increase could raise an additional \$21 million within a year on inland waterways shippers. Congress did raise the fuel tax to 29 cents per gallon for barges in 2014, but this was backed by industry stakeholders with the implicit promise that revenues would go for water transportation projects.

However, vessels with a draft of greater than 12 feet (which includes nearly every ocean-going vessel) are currently exempt from fuel taxes.²⁵ In order to capture this tax differential and increase the amount of revenue garnered from freight traffic on all waterways, there are two options. The first is to rewrite the current tax code to remove this exemption, though this is politically difficult, particularly since the negotiations would have to include foreign vessels and international trade pacts. The second option is to incorporate vessels docking at deep draft and coastal ports through some other freight-related tax.

If this proves to be too difficult, stakeholders may need to consider raising the proposed diesel fuel tax increase to reach the annual \$2 billion mark to make up for the exemption; perhaps a 4.3 or 4.4 cent per gallon increase. This would likely have political ramifications in that stakeholders would push back on investment in projects that benefit the vessels that do not pay into the program. Regardless, international shipping is not fully exempted from the tax since all international shipments require a domestic component at some point in the journey.

4.1.2 Support, opposition, and precedents

Despite the relatively small increase needed for the program, there will likely be some resistance to such a funding source from certain modes. Railroads currently

do not pay any fuel tax at the federal level, and would likely oppose a new tax being levied on something that they previously received tax-free. For example, a diesel fuel tax of 4.3 cents per gallon for general fund deficit reduction was levied on railroads in 1993, but was strongly resisted and repealed in 2004.²⁶

State-level fuel taxes for railroads are not unprecedented. States such as Illinois and New York charge a partial sales tax on diesel fuel for railroads. A tax was recently disputed in Alabama as CSX Transportation claimed the 4 percent diesel fuel tax was discriminatory since trucks and barges are exempt. The Alabama dispute cycled through U.S. Supreme Court twice, most recently in March 2015.²⁷ In both hearings, the Court ruled in favor of CSX and remanded the case to the lower courts for reconsideration, signifying that the tax was discriminatory.²⁸ Considering that the diesel tax discussed would apply across multiple modes and across the entire U.S., it is unlikely that there would be an effective legal discriminatory challenge. Nevertheless, that does not necessarily equate to support from the rail industry.

Despite the increased financial burden, several stakeholders in the industry continue to support user-based fuel taxes that are dedicated to transportation infrastructure investment. The American Trucking Association, the American Automobile Association, and the US Chamber of Commerce wrote a joint letter to Congress in January 2015 asking for long-term HTF funding through a fuel users fee increase.²⁹ As recently as December 2014, Congress passed a 9 cent per gallon increase on diesel fuel (from 20 cents to 29 cents) used by towboats pulling barges through inland waterways. The Waterways Council—representing barge lines and their cargo shippers—was a major proponent of the increase.³⁰

These industry groups have supported diesel tax increases explicitly for an increase in dedicated excise taxes for the HTF or the IWTF. Despite the similar means in these cases (an increase in diesel fuel taxes), the ends are vastly different. Increased tax revenue deposited into existing national trust funds would continue to be applied towards those authorized programs only, unless a specific trust fund legislation was amended to include a freight appropriation. A discretionary grant program, however, could exist outside of these trust funds.

While these groups support a gas tax increase to keep the HTF or IWTF solvent, and potentially even to increase spending levels, it is unclear whether the same groups would fully support dedicating funding to a multimodal program. An increased diesel tax could create divisions within the freight stakeholders as it creates a user-pay/user-benefit cash flow issue; the modes would want to ensure that any diesel revenue from trucks, for example, would be dedicated to roadway freight projects. This has the potential to undermine the multimodal nature of the program.

4.1.3 Non-freight diesel use

While a large majority of the freight community uses diesel fuel so do many passenger vehicles. Because it would be administratively difficult to provide exemptions to diesel-consuming passenger vehicles, it is likely that a multimodal diesel tax increase would have to apply to all users, including passenger vehicles and personal watercraft.

The market demand for diesel-powered passenger vehicles in the U.S. has grown over the past decade with over 7 million passenger vehicles registered today.³¹ Diesel-powered passenger vehicles have a U.S. market share of roughly 2.9 percent so whether or not sales decline, a small increase in the fuel tax for diesel car users would likely have little effect on their overall driving costs.³² For example, an owner of a typical 2014 diesel-powered sedan (averaging at least a combined fuel economy of 30 mpg) who drives 15,000 miles per year would have a \$21.00 increase in their annual fuel costs under a 4.2 cent per gallon increase.³³

4.1.4 Long-term sustainability of diesel tax revenues

The current revenue-raising potential of a diesel fuel tax is relatively high, but the longevity of such a tax could be threatened by improved technologies and alternative fuel sources. Since the industrialization of the freight industry, diesel has been, and remains, the dominant fuel for freight. Over 95 percent of heavy-duty trucks are diesel-powered as are nearly all trains and barges.³⁴ However, switching from diesel vehicles to alternative fuel vehicles (AFV) could weaken the longevity of a fuel tax.³⁵ Despite still being a relatively small share of the automobile market, the U.S. Energy Information Administration (EIA) estimates nearly 2.8 million AFVs were in use in 2014.³⁶ AFVs are anticipated to account for approximately 11 percent of commercial fleets (i.e. freight trucks) by 2040.³⁷

Out of all the subsets of alternative fuel vehicles, natural gas-powered vehicles (NGVs) pose the largest complication to an effective diesel fuel tax. Natural gas powers approximately 150,000 vehicles in the U.S., out of 15.2 million worldwide.³⁸ Natural gas prices tend to run about \$1.50 to \$2 per diesel-gallon-equivalent (DGE) less than diesel, and historically have been less volatile.³⁹ Currently, an average natural gas price costs \$2.71 per million BTU, whereas the DGE is only 129,504 BTU.⁴⁰ While natural gas producers predict a quick shift to NGV in the next few decades, trend analysts see this as a much longer, gradual change.

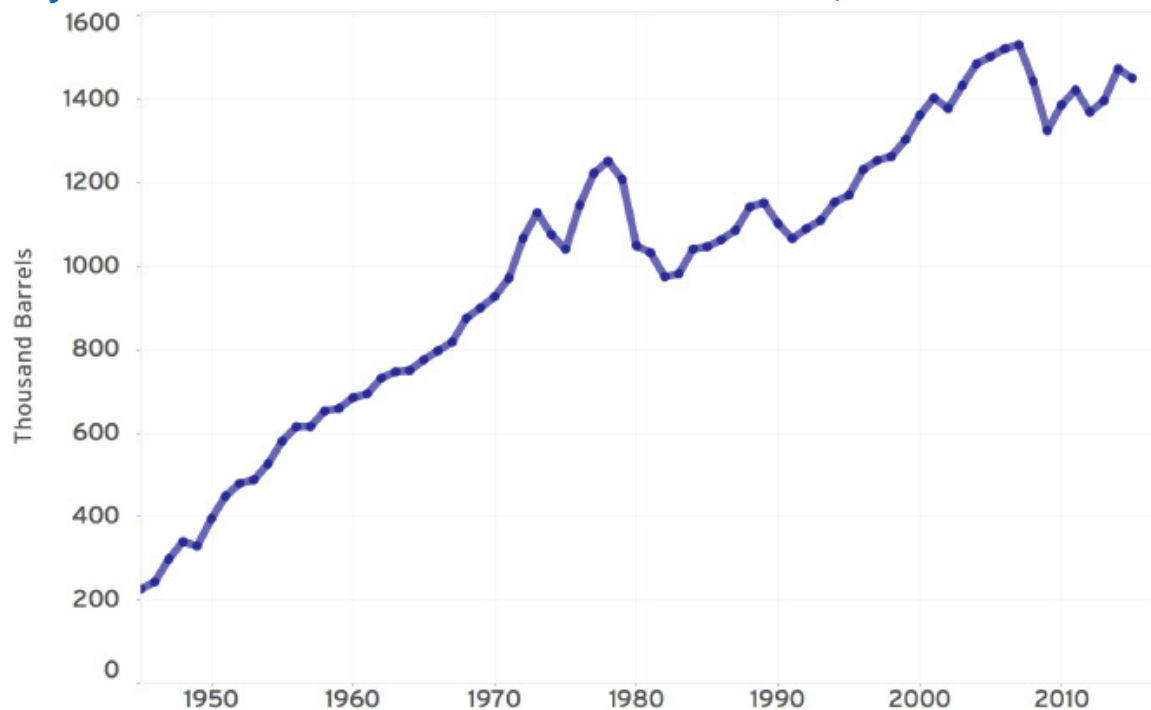
A 2012 National Petroleum Council report included a study on the future market shares of both diesel-powered and natural gas-powered vehicles based on changes in fuel prices. In three scenarios from 2010-2050 (low oil prices, reference case, high oil prices), the amount of diesel-powered heavy-duty trucks in use decreased and the amount of natural gas-powered trucks increased. The price of oil determined how quickly or gradually this process occurred.⁴¹ Some states already levy their own taxes on alternative fuels, including natural gas.⁴² Certain trucks in

ports and shipyards, which only move freight locally, are now 100 percent electric or natural gas vehicles.⁴³

Natural gas use is not anticipated to have as large of an impact on the rail and water freight industries. Natural gas powered trains have only very recently been put to use with smaller-scale rail systems in places like the Czech Republic.⁴⁴ Though natural gas-powered ferries are starting to be used in Sweden and other northern European countries, it was not until this past February that the first contract for a North American LNG bunker barge was issued in California.⁴⁵ Since these trends are so new to rails and water-borne transportation, it is difficult to predict long-term changes that will occur in the industry.

While AFV vehicle usage is expected to increase in the next few decades, increased fuel efficiency of existing truck models is another threat to diesel tax receipts. Fuel-efficient technologies can save up to 20 percent of costs in Class 8 trucks through the installation of advanced combustion engines; an aerodynamic, streamlined body design; and lightweight materials.⁴⁶ In June 2015, the National Highway Traffic Safety Administration (NHTSA) and the U.S. Environmental Protection Agency (EPA), proposed new truck emissions and fuel efficiency standards that are set to reduce fuel consumption.⁴⁷ But even if more trucks reach the 10.7 mpg fuel economy standards this should not be a significant hindrance to the revenue raising ability of a diesel tax. The shipping industry continues to grow, as do the number of trucks on the road.⁴⁸ In addition, diesel vehicles for passenger travel are a growing trend (some predictions put these diesel vehicles at 7 percent of the market by 2020), as is the demand for diesel fuel in general (see Figure 1).⁴⁹ However, the Volkswagen emissions scandal may have long term effects on this trend.

Figure 1: Amount of Diesel Consumed in the U.S., 1945-2015



Source: Energy Information Administration, "U.S. Product Supplied of Distillate Fuel Oil," U.S. Department of Energy, 2016.

4.2 Cost of Freight Shipment Fee

A national cost of freight shipment (COFS) fee would charge a percentage fee on the cost of all shipments, regardless of mode, or whether the shipment produces a waybill or not. Therefore, like the Harbor Maintenance Tax (discussed later), it can be considered a dedicated user fee. This method of funding is new and neither the federal nor state level governments currently collect taxes or fees from shipments. To raise the minimum \$2 billion annually, a rate of at least 0.3 percent on the shipment cost would be applied.

Although there is little precedent for a cost of shipment fee in the United States the idea has been explored in several recent transportation research publications, such as the National Surface Transportation Infrastructure Financing Commission (NSTIFC) report and an American Road and Transportation Builders Association (ARTBA) report. These publications touch on several of the key issues with a COFS fee, which has some similarities to a waybill fee.⁵⁰ This section outlines several of these issues.

4.2.1 Impacts on the freight industry

The NSTIFC considered a freight waybill, which is somewhat analogous to the COFS fee, as a "moderate" funding option (meaning it could be moderately successful) in their 2009 report to Congress.⁵¹ As a supportive argument, they noted that it

requires only a small tax percentage to establish a sustainable, justifiable source of dedicated freight funding. But they expressed concern about taxing goods over weight, and ultimately found that establishing a freight waybill would create "significant implementation and administration costs and would be subject to evasion."

4.2.2 Revenue raising potential and sustainability

A COFS fee has high revenue potential in both the short and long term. Over the long run, unless shipping rates are drastically reduced, funding through this method would increase with time as freight traffic growth continues along with economic growth. As shown in Tables 7 and 8, the increased cost paid by shippers would average out to less than half a penny per ton-mile across all three modes. As it is a percent fee it would also likely increase revenue along with normal long-term inflation.

Table 7: Increased Shipment Cost per Ton Mile by Mode with 0.3 COFS Fee

Mode	Revenue per Ton Mile (cents)	Average Increased Cost per Ton Mile (cents)
Truck	16.54 (2007)	0.050
Rail	3.95 (2012)	0.012
Barge	1.83 (2004)	0.005

Source: U.S. Census Bureau 2012 Commodity Flow Survey and Bureau of Transportation Statistics, "Table 3-21: Average Freight Revenue Per Ton-mile (Current \$)," 2015.

Table 8: Average Trip and Cost by Mode with 0.3 COFS Fee

Mode	Average Trip Distance (miles)	Average Maximum Cargo Capacity (tons)	Total 0.3% Fee Cost on Average Shipment
Truck	227	26	\$2.95
Rail	805	100	\$9.66
Barge	311	1,500	\$23.32

Source: U.S. Census Bureau 2012 Commodity Flow Survey, and Tennessee-Tombigbee Waterway, "Cargo Capacity of Different Transportation Modes, 2015.

4.2.3 Administration, collection, and complications

The administration of a COFS fee would be complex compared with other revenue raising mechanisms. Though costs, both in set-up and in regulation, are difficult to estimate, researchers have explored possible functions of administering agencies. It is possible that the legislature may want to establish an office within U.S. DOT specifically focused on multi-modal freight, as recommended by the Freight Stakeholder's Coalition in 2014 and by Senators Maria Cantwell (D-WA) and Cory Booker (D-NJ) in 2015.⁵²

This department would monitor the tax across the industry, and would establish a point of contact for stakeholders and shippers. The actual fee collection would likely be the responsibility of the Internal Revenue Service (IRS), similar to other taxes and fees. The COFS fee administration would have to carefully consider existing foreign trade regulations, such as protection/perceived protection fees (i.e. the World Trade Organization's safeguard measures) as well as potential exemptions.⁵³

A 2009 ARTBA report examined the financial benefits of applying a waybill fee to highway transportation services.⁵⁴ The report estimates that a 1 percent tax on the trucking industry would have a ten year yield of \$65 billion (\$49 billion after corporate income tax deductions). In their proposal, the IRS would enact and administer the tax under code provisions related to federal excise taxes. The Treasury Secretary would develop regulations to determine a comparable value tax to impose on private truck fleets. This is a significantly higher revenue projection than what is estimated by other reports but it speaks to the ease of revenue raising ability that a COFS fee would bring.

However, due to the issue of private fleet operations the National Cooperative Freight Research Program (NCFRP) suggested that freight waybills alone have “very limited potential as a freight infrastructure funding mechanism.”⁵⁵ This is because private fleet operators such as Wal-Mart use their own vehicles to transport their goods and do not produce a physical “waybill” when goods are shipped. Therefore, they would not immediately fall under a traditional waybill fee.

To account for this, the NSTIFC suggested that waybill-like costs could be estimated and imputed to the private company itself, which is the approach taken with the COFS fee discussed in this section. But the question arises as to how often, and when, and at what level, this would be done. The reporting requirements would have to carefully consider reporting timelines, cost calculations for private shipments, international border crossings, and other issues. These would need to be addressed both through legislation and through the regulatory enforcement body.

4.2.4 Examples from the aviation industry

The NSTIFC suggested that a freight waybill fee (which has some comparisons to a COFS fee) could be modeled on the existing aviation cargo waybill tax.⁵⁶ This 6.25 percent tax on the price paid for transportation of domestic cargo is part of a series of taxes and user fees that collectively fund the Airport and Airway Trust Fund (AATF).⁵⁷ The cargo tax generated \$465 million in FY 2014 and is applied to all domestic cargo. However, it does not apply unless the transportation begins and ends within the U.S., and there are certain exemptions set by the U.S. Department of the Treasury.⁵⁸ As this is an excise tax and not a fee it is regulated and administered by the IRS, with the revenues transferred directly into the AATF. It is important to note that a freight-dedicated waybill fee would have no effect on the 6.25 percent cargo waybill tax, as the latter is deposited directly into the AATF.

A COFS fee on surface transportation freight could have more flexibility in administration and collection, similar to the Federal Aviation Administration (FAA) overflight fee. Overflight fees are charged to operators of aircraft that fly in U.S.-controlled airspace, but do not take off or land within the U.S.⁵⁹ Though fees are administered and regulated by the FAA, they can be paid online through a service provided by the U.S. Treasury. Current overflight fee rates are \$56.86 en route and \$21.26 oceanic per 100 nautical miles Great Circle Distance from point of entry into point of exit from U.S.-controlled airspace.⁶⁰

Once collected, these fees are authorized and appropriated for the Essential Air Service (EAS) program, which is administered by the OST.⁶¹ Over \$2.3 million was enacted in FY 2015 for the administrative expenses alone for the EAS program, and the OST is requesting \$2.41 million for FY 2016.⁶² The difference between COFS fee and overflight fee is that in the overflight case, FAA knows the service has been provided and who to charge. It would be much more difficult for U.S. DOT to administer a system that applies a much larger base of taxpayers.

4.2.5 Example from the barge industry

The Harbor Maintenance Tax (HMT) went into effect in April 1987 after the passage of the Water Resources Development Act (WRDA).⁶³ Though Congress is officially the fee-setting authority, U.S. Customs and Border Protection (CBP) and the U.S. Army Corps of Engineers (USACE) are the administering agencies.⁶⁴ The HMT—which comprises 0.125 percent of the value of commercial goods and cargo shipped through identified ports—only applies to imports, domestic shipments, Foreign Trade Zone admissions, and passengers. Once CBP collects the fees they are deposited into the Harbor Maintenance Trust Fund (HMTF), which was also established under WRDA. Congress can then appropriate trust fund dollars towards harbor operations and maintenance.

Despite the earning power of the HMT (nearly \$1.8 billion in FY 2014) there has been controversy in recent decades over the allocations of these revenues. Rather than appropriating the full amount of revenues earned to the USACE for harbor maintenance and updates, the trust fund has run up a significant balance, leading to a current surplus of over \$8.5 billion. Meanwhile, the freight industry points to underinvestment in the system and ports that are not able to handle sufficient waterborne freight cargo.⁶⁵

The HMT example points to the confusion and controversy caused by a failure of legislation to coordinate activities between government entities and explicitly establish rules of use and allocation. Though a COFS fee would be similar to the HMT, careful steps would need to be taken to ensure that this freight funding mechanism does not face similar appropriations issues.

4.2.6 Support, opposition, and precedents

While a COFS fee is still a policy novelty, its appeal as a relatively fair, stable, multimodal, and small fee on shipment costs has prompted some political support. A bill introduced by Representative Alan Lowenthal (D-CA) in 2014 (and again in 2015) would dedicate \$8 billion annually to freight-related infrastructure projects through two specific grant programs.⁶⁶ Both programs would be funded through a national one percent “waybill fee” (similar to the COFS fee) on the transportation cost of all goods, which would be funneled into a Freight Transportation Infrastructure Trust Fund, established by the bill.⁶⁷

Passing such a fee would require considerable bipartisanship in Congress, as well as agreement across several levels of stakeholders. While establishing a freight waybill fee or COFS fee would potentially take more time to construct than other options, some groundwork has been laid. In addition, the demonstrated bipartisanship on this issue makes it politically feasible in the long-term, as a change in party leadership in the legislative or executive branches would probably not delay or shut down the proposal.

4.3 Non-User Based Funds

Rather than addressing the freight funding problem through taxes on direct taxes or charges to fuel or shipment costs, non-user based funding uses general taxation to raise revenues for freight.

When considering these types of taxes there are two important items to consider. First, none of the broad-based taxes are likely to happen only for a freight program. For example, it is infeasible that the freight industry can get Congress to raise the personal income tax with the sole purpose to fund a \$2 billion freight program.

If any of these methods were to be used, it would be in concert with comprehensive tax reform. For example, if Congress were to create a carbon tax, the freight industry could be poised to collect a portion of that tax for a federal discretionary grant program. This differs from the diesel tax and COFS fee, which if implemented would be done primarily with the intent of funding infrastructure investment.

4.3.1 Value added tax

A value added tax (VAT) is a national tax on all directly purchased goods. Though it is technically a supply chain-based consumption tax (and is explicitly so in most European models), most Americans understand it in terms of a retail or sales-based tax. Most other industrialized nations have a VAT, ranging from 5 percent to 25 percent.⁶⁸ *A VAT would raise billions of new federal dollars, and a \$2 billion freight program would require approximately a 0.04 percent tax.* This would be a small portion of a new VAT and is indirectly linked to the freight system, as freight is essential to moving goods for sale.

Implementing a VAT has high revenue-raising potential both immediately and in the future. However, it would require a major effort in Congress, which has never been attempted due to lack of support. Additionally, states and localities often charge their own sales taxes, which could have a distorting effect if a national tax is added.

A VAT is often recommended as a replacement for the current income tax system rather than as a specific funding mechanism. Cited in the arguments against a consumption-based tax is its regressive nature, as well as the possible funnel-like effect as the stages of production aggregate (with the end consumer bearing the brunt of the costs).⁶⁹ In 2005, the President's Advisory Panel on Tax Reform rejected a national retail tax for being too regressive and difficult to administer. In addition, the general public has traditionally been resistant to the idea of a national sales tax.⁷⁰ While a VAT has high revenue potential its prospects remain very low.

4.3.2 Internet sales tax

While most states and localities have some kind of sales tax items purchased on the Internet are generally exempt. Unlike the federal sales tax, there is broader bipartisan political support for an Internet sales tax.⁷¹ *If such a tax were to be passed, a \$2 billion annual freight program would need approximately a 0.77 percent tax.* This would likely be a portion of a larger sales tax on goods sold online.

The idea of an Internet sales tax was first legislated in the 1998 Internet Tax Freedom Act and later in the Act's 2007 amendments.⁷² According to this legislation, if a business is operating online only and does not have a physical storefront, they are not required to charge applicable state and local sales tax. Some states have started to pass "Amazon" laws that require collection of sales tax even without a physical presence/nexus. Amazon itself has come under fire for only charging sales/use taxes in 24 out of the 50 states (as these are the only states where they have a "physical presence" such as a warehouse or data center).⁷³

Internet sales taxes were the major issue in the Marketplace Fairness Act of 2013, which passed the Senate but never left the Subcommittee on Regulatory Reform, Commercial and Antitrust Law.⁷⁴ This act, introduced by Senator Michael Enzi (R-WY), required all businesses whose income exceeded \$1 million to collect and remit sales and use taxes for remote sales. Though the bill was ultimately not written into law, passing the Senate demonstrates some ability for a similar bill to be supported in the current or a future Congress.

The tax also has an indirect effect on the freight network. Most goods sold domestically online are shipped via truck, and a significant amount of online purchases are imported goods traveling on ocean-going cargo ships and rail cars. What would not be taxed, however, is bulk freight such as grain and coal, along with

other goods that are typically not purchased on an Amazon-like platform. The top 10 commodities by weight are comprised entirely of bulk products and accounted for 65 percent of total tonnage, but only 16 percent of the value of goods, moved in 2012.⁷⁵ Sixteen percent of all vessels that made calls at U.S. ports contained dry bulk, and 91 percent of rail freight consists of bulk commodities.⁷⁶ Bulk goods, however, are an important component of the freight system and would need to be included in the multimodal eligibility of a freight program.

4.3.3 Personal income tax

Congress has, from time to time, discussed reforming the personal income tax. If such reform were to happen, it is conceivable that a freight program could take advantage of some additional revenue that could be dedicated to a long-term annual program. *As the personal income tax is a large revenue source, a 0.15 percent tax would be needed to fund a \$2 billion program.*

Like the VAT, the personal income tax would affect the people of the United States, not just the freight industry. However, the tax would affect a much larger pool of people, and in theory would be progressive rather than regressive. Long-term prospects with any income tax are relatively stable; even in the event of another recession, people are still earning money and are still paying taxes. In addition, personal income is expected to grow in the long term, which would mean funds collected would increase as time goes on. However, the political feasibility of raising the income tax is very small. Though dedicating a portion of the personal income tax could be a beneficial way to fund a freight program, this option might be the least likely of all general fund options.

4.3.4 Corporate income tax

Like personal income tax reform, corporate income tax reform also poses an opportunity for a freight program to capture a small, dedicated portion of the revenues. *Under current taxation levels, a \$2 billion freight program would need a 0.62 percent tax dedicated.* And while corporate income tax reform is a difficult proposition, it is probably more likely than a personal income tax reform and freight has a potential to be a recipient of new or altered revenues.

Since most of these businesses likely utilize the freight network in some capacity, it could be argued that the connection to the freight network is more direct than with personal income tax. This method has excellent revenue-raising ability in both short- and long-terms. As corporate incomes are only expected to increase in the future.

Support for tax reform is bipartisan, yet it still faces a difficult path forward. President Obama's FY2016 budget proposed significant corporate tax reform, including ending international tax deferral to encourage multinational corporations to bring business back into the U.S. It did include a 19 percent tax on all foreign

profits; however, companies could apply tax credits paid to foreign countries towards this requirement. It also reduced the national corporate income tax rate from 35 percent to 28 percent.

In March 2015, Republican Senators Marco Rubio (R-FL) and Mike Lee (R-UT) released a fairly detailed plan to overhaul the corporate tax code.⁷⁷ Though these proposals have not been reconciled, the medium-term prospects for reforming corporate tax reform are higher than many other tax efforts. The role of the freight industry in assisting and promoting these reforms with the goal of securing a dedicated portion of the tax revenue remains small.

4.3.5 Carbon tax

A carbon tax has been proposed as a way to discourage pollution and encourage more efficient use of fossil fuels to achieve several broad environmental goals. Instead of a tax on the consumer, freight companies, or the general taxpayer, it would apply to all emitters of carbon-based pollutants, including freight vehicles. Hence, it is directly inclusive of the freight network, but also expands beyond just shipping companies to include everyday car owners. A carbon tax would also generate a significant amount of new revenue of which freight could potentially secure a dedicated portion. *Proposals have ranged from a tax of \$5 to \$50 per ton of carbon; a \$2 billion program would require approximately \$0.32 per ton.*

A carbon tax would likely face similar issues to a diesel fuel tax in terms of sustainability. Those who emit large amounts of carbon would be more affected by such a tax, but this may encourage shipping companies to pursue alternative power sources. Though in the short term the revenues would be robust, there is a danger in the long term of declining revenues without an increase or inflation index.

For example, British Columbia's carbon tax, implemented in 2008, has gradually risen from \$10 per metric ton to the current \$30 per metric ton, or about 24 cents per gallon of gas.⁷⁸ By maintaining a dynamic tax structure, and cutting income and corporate taxes to offset the regressive nature of the tax, the Canadian province has managed to reduce per capita fuel consumption by 16 percent without any noticeable negative effect on the economy.⁷⁹ While this provides an example of possible short-term effects, it is difficult to estimate longer-term impacts given the still-controversial topic of climate change.

For the purposes of freight funding, the carbon tax would be a means raising specific funds rather than a true carbon tax designed to effectively decrease carbon emissions. While a carbon-based tax has the support of some environmentally conscious stakeholders and politicians, including President Obama, a carbon tax does not receive much support from Congress.⁸⁰

Current Republican leadership remains opposed to a carbon tax; Senate Majority Leader Mitch McConnell (R-KY) (whose state's economy is largely reliant on coal, a leading emitter of carbon) has referred to a carbon tax as a mechanism to ship jobs overseas and raise the cost of living.⁸¹

With such short-term roadblocks and long-term uncertainty, a carbon tax may not be the most tactical form of guaranteeing freight funding. The concept of introducing a carbon tax as a funding mechanism for freight transportation is inherently problematic. While carbon emissions are related to freight, the tax itself creates perverse incentives for both government and the private sector. If Congress were to design a carbon tax to sustainably fund freight, it would want to levy the fees at a rate that would not affect the rate at which carbon is emitted. On the other hand, if Congress' aim were to levy a carbon tax in a way that would change behavior, they would likely tax carbon at a significantly higher rate.

As with any of the proposed non-user based sources, the freight program would play a minor role in the creation and dedication of the funds, as there would likely be heavy competition from various governmental programs for use of those funds.

4.3.6 General funded program

A theoretically simple way to fund a federal freight grant program would be to establish a program funded through the general fund that is subject to annual appropriations. This is not unprecedented. Some discretionary programs, such as TIGER and Transit New Starts, are funded through general funds and the HTF has increasingly relied on general fund transfers to maintain spending levels. Meanwhile, a 2014 Eno study found that most peer nations (Australia, Canada, Germany, Japan, and the United Kingdom) rely on general fund appropriations for almost all of their federal transportation programs.⁸²

There are a couple of challenges in terms of creating a new surface transportation program that is funded through the general fund. The first is that, under current rules, creating a new program would require offsets elsewhere in the budget, or using the limited baseline budget growth to fund the program. This means that some "pay-for" would need to be identified. Secondly, while discretionary grant programs that provide Congress some oversight in the selection process are politically popular, creating these types of programs is legislatively challenging. TIGER, for example, was created through the American Recovery and Reinvestment Act of 2009 during a very specific political climate.

However, once an initial offset is identified, a general funded program has a number of benefits. First, from a "user-pay" perspective, one could make a strong argument that general funds are an appropriate revenue source because all consumers and taxpayers rely on the freight network. Second, because the funding source is not modally specific, the way that the program distributes funding also does not have

to be modally specific. For example, as explored earlier, if diesel were the revenue source for a freight program, it is likely that the trucking industry would expect a larger share of the funding to go toward trucking specific projects because they would be paying more into the system. These modal disputes would largely be eliminated if the general fund were the primary funding source for the program.

Another benefit of subjecting a new freight program to annual appropriations is that program spending can be adjusted based on spending needed rather than the amount of funding generated through a specific excise tax or fee. While the user pay theory suggests that a user pay mechanism has the benefit of setting an appropriate floor and ceiling on spending, the 2014 Eno report demonstrated that this is not the case considering the numerous infusions into the HTF since 2008.⁸³ If Congress were to use revenues into the HTF as an indicator of investment need, spending would have decreased along with the decreasing receipts. Under annual appropriations, Congress can increase or decrease spending levels depending on the popularity of the program versus other federal needs.

4.3.7 General fund transfer into the HTF

A related option is to place the new freight program within the HTF, which would allow it to bypass the annual appropriations process and instead be funded through contract authority. Contract authority is a special budgetary mechanism that allows the Congressional authorizing committees to appropriate HTF over multiple years. Placing the freight program in the HTF would likely mean that total spending would have to increase from the baseline. This would be challenging due to the current shortfalls of the program; currently general fund infusions into the HTF have aimed to simply maintain baseline spending rather than allow for increased spending levels.

5. Analysis and Recommendations

While there is a clear consensus that there would be value in a multimodal freight program, identifying a funding source in an era of constrained federal funding is challenging. The most feasible options include a dedicated diesel tax, a dedicated COFS fee, and the non-user based general fund (with multiple options of pay-fors and budgetary approaches).

As described in the initial research methodology, this analysis was intended to evaluate the funding sources on several levels. The research was framed around the following five questions:

- ***How closely does the funding source relate to the freight network?*** If the freight industry is going to recommend a funding source to Congress for a freight investment program, it is more powerful if that funding source is imposed on them. Also, the freight investment program would provide benefits to the freight industry, so a source that is derived from that same industry is reasonable.
- ***Which users are most affected by the funding source?*** The federal freight investment program is intended to invest in freight projects on a mode-neutral basis. Industry groups will carefully evaluate funding sources to be sure that the funding source does not put them at a disadvantage. Also, the amount paid in by a particular mode might have an influence on the final distribution of projects.
- ***What are the long-term prospects for the funding source?*** Some federal investment programs, such as the HTF, have had problems in recent years with declining revenues because of insufficient revenue sources, such as the gasoline tax. Revenue sources that do not grow with the economy would have to be periodically raised by Congress, which can be difficult, as the gasoline tax example shows.
- ***What is the revenue-raising ability of the funding source?*** Some revenue sources considered, such as the tire tax, would require very large increases to raise sufficient revenues for a federal grant program. Others require very small charges to raise the same amount of revenue. This is an important consideration to avoid market distortion or large cost increases on the industry.
- ***What is the level of administrative costs of the funding source?*** Some methods of taxation or fees require a simple increase in an existing rate, while others would create a new administrative process to collect and monitor the tax or fee. Costs do not have to be monetary costs, as time and paperwork costs are included.
- ***What is the likely political acceptability of the funding source?*** Any revenue source proposed will have to pass Congress to be enacted. While having industry support is helpful, Congress rarely complies. For example, current excise taxes on diesel and gasoline have not been raised since 1993 despite broad industry and business support.

Table 9 ranks the funding sources based on the research framework. While somewhat subjective, the rankings are intended as a guide to exploring the efficacy and utility of each funding source.

Table 9: Ranking of Funding Mechanism Metrics for a Multimodal Freight Program

Funding Mechanism	Relationship to Freight Network	Multimodal Nature	Financial Sustainability	Revenue Raising Ability	Ease of Administration	Political Acceptability
Diesel Fuel Tax	Medium	Medium	Low	High	High	Medium
Cost of Freight Shipment Fee	High	High	High	High	Low	Medium
Value Added Tax	Medium	Medium	Medium	High	Low	Low
Internet Sales Tax	High	Medium	High	High	Medium	Medium
Personal Income Tax	Medium	Medium	Medium	High	High	Low
Corporate Income Tax	Medium	Medium	Medium	High	High	Medium
Carbon Tax	Low	Medium	Low	High	Low	Medium
General Fund Program/ Transfer into HTF	Medium	Medium	Medium	Medium	High	Medium

Based on the research and analysis presented in this report, the Eno Freight Working Group recommends the following for a federal freight discretionary grant program: *a general fund program that can enhance the existing program now and a dedicated, small fee based on the cost of freight shipment (charged to the owners of cargo) for the long term.*

Industry stakeholders, particularly the shippers that would likely have a cost-of-shipment fee assessed on their customers' cargo, have raised concerns about the administration and collection of this fee. There is, however, openness to the adoption of such a fee once it is demonstrated that it can be structured in a way that minimizes administrative burdens to shippers. The concerns of shippers can be worked out over the long term while general funds are the best way to proceed in the short term. The details are as follows:

Congress should appropriate general fund revenues for a national multimodal freight discretionary program. A competitive freight program at the federal level, regardless of funding source, is critical for the industry and the national economy. Although a general funded program may not provide as much long-term certainty as a dedicated revenue source, a freight program funded through general revenues has several advantages. First, general funds are not subject to “return-to-source” claims in which freight modes and geographies would want to see their portion of the funding returned directly to them in project grants. Second, the freight industry supports the entire national economy, so using general funds to make freight system improvements, as is common in other countries, is justifiable. Finally, the general fund option provides the ability to fully fund a program immediately, while a solution providing long-term certainty is finalized.

Since Congress has shown a recent willingness to support transportation programs with general funds, the group supports a recommendation of a general funded grant program using the following features to aid in drafting legislation:

- Congress should increase the total funding of the freight discretionary grant program included in the FAST Act to at least \$2 billion annually, with the ability to increase funding as the program becomes established.
- The general funded discretionary grant program should expand on the freight grant program passed in the FAST Act and make it fully multimodal in nature.
- Congress should use a distribution mechanism that can provide funding stability for large, complex projects that can take several years to complete.

In the long term, Congress should authorize the implementation of a COFS fee that will be dedicated to a national freight discretionary grant program. A COFS fee has several advantages over other user fees as thoroughly analyzed in this report. In particular, it would not disproportionately affect a particular freight mode, would be a relatively small fee assessed on the cost of shipping, and would continue to grow in revenue along with the shipping industry and the economy. There are still issues that need to be worked out with respect to the administration and management of such a fee, but the groundwork can begin now to ensure a smooth implementation with industry input. While the exact details of a COFS fee would need to be developed in Congress, Eno’s Freight Working Group recommends that Congress employ the framework of the following principles to aid in drafting legislation:

- The fee should be assessed on the cost of shipping for all surface transportation modes at a rate of at least 0.3 percent.
- The fee should be charged to owners of freight cargo at an even rate across modes so that no mode is disproportionately affected.
- Congress should dedicate 100 percent of the net revenues of this fee to the federal freight discretionary grant program, and U.S. DOT should be required to spend the balance of this fund each year for the program as described above.

- International portions and flight portions of shipments should be exempt from the fee.
- The Internal Revenue Service, or any administrative entity, must create a reporting system that is fair and straightforward for payment of the fee. Special care must be made to ensure that the administrative burden is minimal to shippers and other users of the freight system.
- Private fleets and other shippers should be subject to the fee and required to submit payment within the same context as other shippers, but their reporting requirements must also be simple and streamlined.
- Industry groups and shippers should have input and engagement in the administration of the system so that it is workable.

The research and analysis used to inform these recommendations are based on consensus among a diverse group of industry participants. It is the Eno Working Group's hope that this can lead to full and long term funding of a critical element of the American economy: a federal multimodal freight discretionary grant program.

APPENDIX: Members of Select Freight Policy Groups

Advisory Committee on Supply Chain Competitiveness

Council of Supply Chain Management Professionals	Great Lakes Dredge & Dock Company, LLC
Georgia Center of Innovation for Logistics	3M Supply Chain
Jarden Consumer Solutions	ABF Freight System, Inc.
CDM Smith	Tampa Port Authority
Coalition for America's Gateways and Trade Corridors	The Boeing Center, Washington University in St. Louis
Stupp Corporation	Port of Houston Authority
Robert H. Smith School of Business, University of Maryland	Marsh and McLennan Companies
The Port Authority of New York and New Jersey	HNM Global Logistics
CA Technologies	North American Strategy for Competitiveness Airlines for America
Parsons Brinckerhoff (Representing OneRail Coalition)	Amazon.com
International Paper	Florida's Heartland Regional Economic Development Initiative
Deloitte Consulting LLP	Global Cold Chain Alliance
American Fuel and Petrochemical Manufacturers	General Electric Company
American Society of Transportation and Logistics	The Port of Los Angeles
CenterPoint Properties	UPS
Menlo Worldwide Logistics	American Association of State Highway and Transportation Officials
The Airforwarders Association	Soy Transportation Coalition
Target Corporation	The SPECTRUM Group
National Electrical Manufacturers Association	A. Strauss-Wieder, Inc.
Cambridge Systematics, Inc.	Texas A&M Transportation Institute
	The Boeing Company
	Campbell Soup Company
	BNSF Railway

Freight Stakeholders Coalition - 2014 Platform

American Association of Port Authorities	National Association of Regional Councils
American Association of State Highway and Transportation Officials	National Association of Waterfront Employers
American Trucking Association	National Customs Brokers and Forwarders Association
Association of Metropolitan Planning Organizations	National Industrial Transportation League
Coalition for America's Gateways and Trade Corridors	National Railroad Construction and Maintenance Association
Intermodal Association of North America	National Retail Federation
International Warehouse and Logistics Association	Retail Industry Leaders Association
National Association of Manufacturers	U.S. Chamber of Commerce
	Waterfront Coalition
	World Shipping Council

National Freight Advisory Committee

Randell Iwasaki, Chair
Executive Director, Contra Costa
Transportation Authority
Mortimer L. Downey III, Vice Chair
Chairman, Coalition for America's Gateways
and Trade Corridors
Cargo Airline Association
Mayor, City of Indianapolis
Environmental Law & Policy Center
Parents Against Tired Truckers
Citizens for Reliable and Safe Highways
Owner-Operator Independent Drivers
Association
OneRail
Public Citizen
Port of Hueneme, California
Chairman, Fulton County, Georgia
Patriot Rail Corp
Arkema Inc.
Mayor, Miami-Dade County
Genevieve Giuliano, University of Southern
California
Association of American Railroads
Lambert International Airport
Cargill, Inc.
New York City Department of Transportation
International Brotherhood of Teamsters
José Holguín-Veras, Rensselaer Polytechnic
Institute

UPS Freight
Brotherhood of Maintenance of Way
Employees Division of the Teamster Rail
Conference
California Transportation Commission
AFL-CIO
A&S Services Group
Port of Monroe, Michigan
The Home Depot
State of California
Port Authority of New York & New Jersey
Con-Way Inc.
The Rios Group
Mayor, City of Philadelphia
True Value Company
Ingram Barge Company
SMART - Transportation Division
Nucor Steel - Berkeley
National Association of Counties
Commercial Vehicle Safety Alliance
Freight Mobility Strategic Investment Board
Cleveland Airport
Montana Department of Transportation
The Cianbro Companies
C. Michael Walton, The University of Texas at
Austin
Port of Houston Authority
Mayor, City of Memphis

Coalition for America's Gateways and Trade Corridors Reauthorization Platform

ACS Transportation Solutions
AECOM
Alameda Corridor - East Construction
Authority
Cambridge Systematics, Inc.
Canaveral Port Authority
Cascadia Center
CenterPoint Properties Trust
Chicago Metropolitan Agency for Planning
City of Chicago
City of Industry, A Municipality
COMPASS - Community
Planning Association of
Southwest Idaho

Dewberry
Economic Development Coalition of
Southwest Indiana
FAST Corridor Partnership (Seattle-Tacoma-
Everett)
Florida Department of Transportation
Florida East Coast Railway
Florida Ports Council
Freight Mobility Strategic Investment Board
(Washington State)
Gateway Cities Council of Governments
HERZOG
Illinois Soybean Association
Intermodal Association of North America

Jacobs Engineering
Kootenai Metropolitan Planning Organization
Los Angeles County Metropolitan
Transportation Authority
Los Angeles Economic Development
Corporation
Majestic Realty Co.
Maricopa Association of Governments
Memphis Chamber of Commerce
Metropolitan Transportation Commission
National Railroad Construction and
Maintenance Association
North American Strategy for Competitiveness
Northwest Seaport Alliance
Ohio Kentucky Indiana Regional Councils of
Government
Orange County Transportation Authority
Oregon Department of Transportation
Parsons
Parsons Brinckerhoff
Port Authority of New York & New Jersey
Port of Hueneme
Port of Long Beach

Port of Los Angeles
Port Miami
Port of Oakland
Port of Pittsburgh
Port of Portland, OR
Port of San Diego
Port of Seattle
Port of Stockton
Port of Tacoma
Port Tampa Bay
Port of Vancouver USA
Puget Sound Regional Council
RAILCET
San Diego Association of Governments
Supply Chain Innovation Network of Chicago
Southern California Association of
Governments
Tennessee Department of Transportation
Washington State Department of
Transportation
West Coast Corridor Coalition
Will County Center for Economic Development

Endnotes

- ¹ Numerous organizations, including the Eno Center for Transportation (Eno), the Coalition for America's Gateways and Trade Corridors (CAGTC), the American Road and Transportation Builder's Association (ARTBA), the National Freight Advisory Committee, the industry association-supported Freight Stakeholders Coalition, the Advisory Committee on Supply Chain Competitiveness, and a House Transportation and Infrastructure Freight Transportation Panel have all weighed in on the need for a multimodal federal program for freight investments.
- ² National Freight Advisory Committee, "Recommendations to U.S. Department of Transportation for the Development of the National Freight Strategic Plan," 2014.
- ³ Freight Stakeholders Coalition, "Surface Transportation Reauthorization Platform," 2014.
- ⁴ International Trade Administration, "Advisory Committee on Supply Chain Competitiveness," U.S. Department of Commerce, 2014.
- ⁵ Advisory Committee on Supply Chain Competitiveness, "Committee Approved Freight Policy Recommendations," U.S. Department of Commerce, 2014.
- ⁶ Ibid.
- ⁷ Committee on Transportation and Infrastructure, "Special T&I Panel Releases Report on Improving U.S. Freight Transportation," U.S. House of Representatives, October 29, 2013.
- ⁸ Coalition for America's Gateways and Trade Corridors, "CAGTC Reauthorization Platform," 2015.
- ⁹ National Surface Transportation Commission on Infrastructure Financing Commission, "Paying our Way," 2009.
- ¹⁰ U.S. Government Accountability Office, "National Policy and Strategies Can Help Improve Freight Mobility," GAO-08-287, 2008.
- ¹¹ U.S. GAO, "A Comparison of the Costs of Road, Rail, and Waterways Freight Shipments That Are Not Passed on to Consumers," GAO-11-134, 2011.
- ¹² Bipartisan Policy Center, "Performance Driven: A New Vision for U.S. Transportation Policy," Washington, 2009.
- ¹³ Adie Tomer and Joseph Kane, "Establish a National Freight Investment Program to Improve Trade and Economic Performance," Brookings, 2015.
- ¹⁴ American Association of State Highway and Transportation Officials, "Matrix of Illustrative Surface Transportation Revenue Options," Washington, 2014.
- ¹⁵ Soy Transportation Coalition. "What is the Inland Waterways Trust Fund?" Ankeny, Iowa. 2015
- ¹⁶ Diesel Technology Forum. "The Top 5 Questions About Diesel Fuel - the Fuel that Powers America." May 2014.
- ¹⁷ Clayton Boyce. "America's Trucking Industry Will Not Support VMT Tax, Says ATA Vice President," American Trucking Association, Washington, April 20, 2010.
- ¹⁸ Because fuel used by airplanes is a different grade is not the same fuel, diesel, used by trucks, rails, and barges, separate legislation would likely have to be put into place in order to incorporate air cargo into a fuel tax. But even with this incorporation, trucks would still bear the largest burden of a diesel fuel tax.
- ¹⁹ Build America Transportation Investment Center Institute, "Federal Fuel Motor Taxes," Washington, 2015.
- ²⁰ Oak Ridge National Library, "Vehicle Technologies Market Report," Heavy Trucks, 2014.
- ²¹ See: Energy Information Administration, "Sales of Distillate Fuel Oil by End Use," U.S. Department of Energy, 2016; and Diesel Technology Forum, About Clean Diesel: Trucking,"

- ²² Energy Information Administration, "Gasoline and Fuel Update." U.S. Department of Energy, 2016.
- ²³ Association of American Railroads, "Total Annual Spending, 2013 Data," Washington, 2014.
- ²⁴ Charles V. Vern, "Inland Waterways: Recent Proposals and Issues for Congress," Congressional Research Service, 2013.
- ²⁵ Internal Revenue Service, "Fuel Taxes," 2015.
- ²⁶ *Progressive Railroading*, "Jobs' Bill Becomes Law: Class Is Can Drop Diesel Tax, Short Lines Will Collect Trackwork Tax Credit, October 25, 2004.
- ²⁷ Daniel C. Vock, "Alabama Suffers Setback in Railroad Tax Case," *Governing*, March 5, 2015.
- ²⁸ Alabama Department of Revenue ET AL. v. CSX Transportation, INC. Docket 13-553U.S., 2015.
- ²⁹ Letter from American Trucking Association, American Automobile Association, and U.S. Chamber of Commerce to 114th Congress, January 26, 2015.
- ³⁰ AASHTO, "Congress Enacts Diesel Fuel Tax Hike on Barge Lines for Lock and Dam Infrastructure," December 19, 2014.
- ³¹ Diesel Technology Forum "U.S. Diesel Car Registrations Increase By 24%, Hybrids Up 33%; Total Car Market Registrations Increase Just 2.7% Since 2010," Frederick, MD, April 25, 2013.
- ³² National Association of Convenience Stores and Fuel Retailing, "Diesel Vehicle Sales Forecasts are Strong - But Are Consumers Ready?" Alexandria, VA, October 31, 2014.
- ³³ "Compare New and Used Diesel Vehicles." US Dept. of Energy Office of Energy Efficiency and Renewable Energy. 2015.
- ³⁴ ORNL, 2014.
- ³⁵ Office of Energy Efficiency and Renewable Energy, "Alternative Fuels," U.S. Department of Energy.
- ³⁶ Energy Information Administration, "How Many Alternative Fuel and Hybrid Vehicles are there in the U.S.?" U.S. Department of Energy, 2013.
- ³⁷ Texas A&M Transportation Institute, "Alternative Fuel Vehicle Forecasts: Final Report," College Station, TX, 2015.
- ³⁸ Energy Information Administration, "Natural Gas Vehicles," Alternative Fuels Data Center, U.S. Department of Energy, 2015.
- ³⁹ Deborah Lockridge, "Natural Gas: What Fleets Need to Know, Part 1," *Trucking Info*, August 2012; and Energy Information Administration, "Natural Gas Weekly Update," U.S. Department of Energy, July 9, 2015.
- ⁴⁰ Nat G CNG Solutions, LLC, "BTUs, CFMs, and GGEs Demystified," Houston, TX, 2015.
- ⁴¹ National Petroleum Council, "Advancing Technology for America's Transportation," Washington, 2012.
- ⁴² Simon Workman and Jaime Rall. "Taxation of Alternative Fuels," National Conference of State Legislatures, Denver, CO, 2015.
- ⁴³ Port of Los Angeles, "Zero Emission Technologies". 2016.
- ⁴⁴ Omnitek Engineering Corp. "Omnitek Natural Gas Technology Powers Locomotive in Czech Republic," Vista, CA, January 27, 2015.
- ⁴⁵ NGV Global, "Construction Contract for First North American LNG Bunker Barge," Auckland, New Zealand, February 26, 2015.
- ⁴⁶ Office of Energy Efficiency and Renewable Energy, "Energy 101: Heavy Duty Vehicle Efficiency," U.S. Department of Energy, 2015.
- ⁴⁷ Anthony Foxx, "Fuel Efficiency Improvements: Saving Money, Oil, Planet," U.S. Department of Transportation, June 19, 2015.
- ⁴⁸ Maks Alam, et al. FAF2 Freight Traffic Analysis. Chapter 6: Capacity and Performance, Federal Highway Administration, 2007.

- ⁴⁹ Diesel Technology Forum, "Diesel at Work: Cars, Trucks, and SUVs," Frederick, MD, 2015.
- ⁵⁰ The primary difference between a cost of freight shipment fee and a waybill fee is that the former is intended to capture freight shipments that do not produce an official "waybill" receipt.
- ⁵¹ NSTIFC, 2009.
- ⁵² Freight Stakeholders Coalition, "Surface Transportation Reauthorization Platform," 2014 and U.S. Senate, "National Multimodal Freight Policy and Investment Act, 114th Cong. S. 1680, 2015.
- ⁵³ "Safeguard Measures." World Trade Organization. Retrieved from https://www.wto.org/english/tratop_e/safeg_e/safeg_e.htm on July 8, 2015.
- ⁵⁴ American Road and Transportation Builders Association, "Budgetary Impact of Highway Transportation Services Tax," Washington, 2009.
- ⁵⁵ National Cooperative Freight Research Program, "Dedicated Revenue Mechanisms for Freight Transportation Investment," Transportation Research Board, 2012.
- ⁵⁶ The power to levy this tax stems from 26 U.S.C. § 4271 (Internal Revenue Code of 1986) as amended through the FAA Modernization and Reform Act of 2012.
- ⁵⁷ Committee on Transportation and Infrastructure, "Improving the Nation's Freight Transportation System," U.S. House of Representatives, 2013.
- ⁵⁸ U.S. Congress, Joint Committee on Taxation. "Background Information on Federal Air Transportation Excise Taxes and the Airport and Airway Trust Fund," February 3, 1997. Exemptions include property transported by emergency medical aircraft performing qualifying medical services, amounts paid for transportation of property in crop dusting, and aerial firefighting service, or the use of helicopters in construction such as setting equipment on the roofs of buildings or installing power lines.
- ⁵⁹ Federal Register Vol. 76, No. 139, p. 43112-43118, July 20, 2011.
- ⁶⁰ Federal Aviation Administration, "Overflight Fees."
- ⁶¹ U.S. Department of Transportation, "Budget Estimates 2016: Federal Aviation Administration," 2015. Note that the EAS program has no relation to the overflight fees other than it was an available source of funding.
- ⁶² U.S. DOT "FY2016 OST Congressional Budget Justification," 2015.
- ⁶³ U.S. Customs and Border Patrol, "Harbor Maintenance Fees (HMF)," 2015.
- ⁶⁴ U.S. GAO, "Federal User Fees: Substantive Reviews Needed to Align Port-Related Fees with the Programs They Support," GAO-08-321, 2008.
- ⁶⁵ American Association of Port Authorities, "Letter to Senate Finance Committee on Tax Reform/HMT, Private Activity Bonds, Wind Energy Credit." Alexandria, VA, April 14, 2015.
- ⁶⁶ Alan Lowenthal, "Congressman Lowenthal Bill Will Create National Freight Program to Rebuild Crumbling Infrastructure," October 3, 2014.
- ⁶⁷ In addition to the fifteen bipartisan co-sponsors, stakeholder support for the bill includes the San Francisco Bay Area's Metropolitan Transportation Commission, CAGTC, ASCE, and the Los Angeles County Metropolitan Transportation Authority. Asia Morris, "Congressman Alan Lowenthal Introduces Bill to Strengthen Nation's Deteriorating Freight Infrastructure System," *Long Beach Post*, March 19, 2015.
- ⁶⁸ Lori Montgomery, "Once Considered Unthinkable, U.S. Sales Tax Gets Fresh Look," *Washington Post*, May 27, 2009.
- ⁶⁹ Tax Policy Center, "Ways to Improve the Tax System: National Retail Sales Tax," Washington, 2015.

- ⁷⁰ Although a 2013 poll found that early half of American adults favor a proposal to eliminate the federal income tax and replace it with a national sales tax. Rasmussen Reports, "45% Favor Replacing Income Tax with National Sales Tax," 2013.
- ⁷¹ Mario Trujillo and Naomi Jagoda, "Online Sales Tax Supporters Hope Gamble Pays Off," *The Hill*, February 16, 2016.
- ⁷² The Internet Tax Freedom Act Amendments Act, H.R. 3678, 110th Cong, 2007.
- ⁷³ Greg Bensinger, "Which States Make You Pay An Amazon Sales Tax," *Wall Street Journal*, October 1, 2014.
- ⁷⁴ Marketplace Fairness Act, S. 743, 113th Cong, 2013.
- ⁷⁵ Federal Highway Administration and Bureau of Transportation Statistics, "Freight Facts and Figures," U.S. Department of Transportation, 2013.
- ⁷⁶ Federal Railroad Administration, "Freight Rail Today," U.S. Department of Transportation, 2015.
- ⁷⁷ Niels Lesniewski, "Rubio, Lee Unveil Tax Code Overhaul, Welcome Critics," *Roll Call*, March 4, 2015.
- ⁷⁸ Diane Toomey, "How British Columbia Gained by Putting a Price on Carbon," *Yale Environment 360*, April 30, 2015.
- ⁷⁹ *The Economist*, "British Columbia's Carbon Tax: The Evidence Mounts," July 31, 2014
- ⁸⁰ Timothy Cama, "Dems Propose Carbon Tax," *The Hill*, June 10, 2015.
- ⁸¹ Coral Davenport, "President's Drive for Carbon Pricing Fails to Win at Home," *New York Times*, September 27, 2014.
- ⁸² Eno Center for Transportation, "How We Pay for Transportation: The Life and Death of the Highway Trust Fund," Washington, 2014.
- ⁸³ Ibid.



Eno Center for Transportation
1710 Rhode Island, Ave., NW
Suite 500
Washington D.C. 20036

202-879-4700
publicaffairs@enotrans.org