The UNIVERSITY of VERMONT

James M. Jeffords Center's

Vermont Legislative Research Service

Vermont Rail Dependency

The railroad industry has a significant impact on the lives of Vermonters every day. Many industries that supply vital goods for the economy are dependent on the continued operation of the railroad system. A study prepared for the Vermont Agency of Transportation estimates that freight tonnage will increase in Vermont by 44 to 55% by 2020, underscoring the importance of a healthy rail system.[1]

In this report we will look at the current state of the railway infrastructure in Vermont. Following this assessment we will then examine the economic and environmental impacts of shipping via freight rail, and what this means for Vermont.

Vermont's Current Railways

There are 600 miles of railroad track in Vermont. How these lines are categorically classified is based on how much revenue they produce each year. There are three categories of rail line in Vermont—"Class I," "Regional," and "Short Line." Class I rail lines are described as those which produce $289.4 million or more in revenue per year. There are currently only three miles of Class I rail in Vermont located on the northwestern border with Canada. Class I rail lines account for 93% of freight revenue nationally. Far more common in Vermont are Regional and Short Line railroads. Regional railroads are described as those which earn annual revenues of at least $40 million, while Short Line railroads earn less than $40 million per year. There are 219 and 378 miles of these types of track in Vermont, respectively.[2]

The standard weight capacity of railroad cars throughout the nation currently sits at 286,000 pounds per rail car; however, in many locations throughout the state, the maximum weight limit for rail lines and bridges remains at the outdated standard of 263,000 pounds. These bridges and rail lines cannot support the weight of contemporary rail cars without major

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[1] Parsons Brinckerhoff and Fitzgerald & Halliday, Inc, "State Rail & Policy Plan, 2006," Report Prepared for the Vermont Agency of Transportation, December 2006, accessed February 16, 2012, http://railroads.vermont.gov/Documents/railpolicyplan/AOT-PLN-Rail_PP_fullreport.pdf, pp. 37-39.

[2] Brinckerhoff and Fitzgerald & Halliday, Inc., "State Rail & Policy Plan, 2006," pp. 21-22.

upgrades. These upgrades are costly. It has been estimated that to bring all bridges and tracks in Vermont up to the 286,000 pound standard would cost $118 million—$29 million to upgrade the tracks and $89 million to upgrade the bridges.[3]

There are many repercussions of not maintaining a nationally adequate rail infrastructure for the state. Vermont loses out on potential business because trains from other states, which carry more weight than the rail lines in Vermont are able to handle, actively avoid travelling through Vermont. This has effectively made the state an 'island' in the rail shipment industry where many freight carriers will circumvent the state altogether. If these outdated rails and bridges were to be updated, the Vermont railroad industry would be even more economically beneficial for the state of Vermont than it is today.[4] The fact that these regional and short line rails are losing out on potential business by not being able to carry these heavier rail cars further compounds the problem—without this interstate business they are not able to upgrade their infrastructures.[5]

The current state of Vermont's railroad infrastructure has direct implications on the impact the industry is able to have on the Vermont economy.[6] Next we will look at the impact of the transport rail industry on the Vermont economy, including the implications that an inadequate infrastructure has on the economy.

Economic Impact of the Rail Industry

Currently, the railroad industry plays a significant role in Vermont's economy. In addition to the impacts created by shipping through rail, discussed later, it is estimated that this industry creates 616 Vermont jobs with a payroll of $19.2 million.[7] Tax payments to the state by railroad employees also allow for more funding in social programs, educational services, and other programs which provide a net fiscal gain to the state of Vermont.[8]

There are nine railroad companies in the state of Vermont and 185 direct employees of these companies in the year 2003. The average wage in Vermont was $32,090 in the year 2005 and the average wage provided to employees of the Vermont railroads in that same year was around $48,265. In addition to the 185 employees who work directly for the Vermont railroads, there are 261 other jobs that would not be available without the presence of these railroads. In

[3] Brinckerhoff and Fitzgerald & Halliday, Inc., "State Rail & Policy Plan, 2006," p. 41.
[4] Brinckerhoff and Fitzgerald & Halliday, Inc., "State Rail & Policy Plan, 2006," pp. 37-39.
[5] Richard Heaps and Arthur Woolf, "The Economic Impact of Vermont's Railroad Industry on the Vermont Economy," Northern Economic Consulting, March 4, 2005, p. 38.
[6] Richard Heaps and Arthur Woolf, "The Economic Impact of Vermont's Railroad Industry on the Vermont Economy," Northern Economic Consulting, March 4, 2005, pp. 38-41.
[7] Richard Heaps and Arthur Woolf, "The Economic Impact of Vermont's Railroad Industry on the Vermont Economy," pp. 20-21.
[8] Richard Heaps and Arthur Woolf, "The Economic Impact of Vermont's Railroad industry on the Vermont Economy," p. 12.

total, there were 515 jobs dependent on the railroads in Vermont in the year 2005.[9] It is estimated that for every additional $1 million in revenue generated by the railroad industry, an additional 11.4 jobs will be created.[10]

Many industries in Vermont are reliant on freight rail in order to survive. Examples of these industries include mining and mineral extraction, grain delivery, and rock salt shipping. These industries all benefit from freight rail because shipping with trucks is more difficult and less affordable.[11]

An example of one of these rail-dependent companies in Vermont is OMYA, a marble shipping company located in Florence. OMYA is currently forced to lighten the load of its rail carts, which are capable of carrying 286,000 pounds, because the Vermont rail infrastructure is unable to support greater weight.[12] OMYA is thus forced to spend more on transportation costs. Every rail cart that ships OMYA products would need to be replaced by four 80,000-pound trucks. Since OMYA ships hundreds of thousands of tons of product, shipping by truck would be more expensive, and cause OMYA to be less competitive.[13]

Each year the Vermont Agency of Transportation ships up to 300,000 tons of rock salt. This is another example of a commodity that benefits from Vermont's rail industry. Shipping rock salt by truck over 100 miles has been described as 'prohibitively expensive.'[14] George Barret, co-owner of Barret Trucking Co. (also a large importer of rock salt) has acknowledged how important the rail industry in Vermont is by stating, "People don't realize how important rails are. They don't realize at all. If it wasn't for rail, there would be another 100 trucks a day, maybe more, on 22A all winter long. Without rail, I don't know what we would do."[15]

The external costs associated with truck shipping further underscore the benefits of the rail shipment industry. External costs associated with accidents, air pollution, and greenhouse gasses were found to be higher than that of rail, as demonstrated in Figure 1 below. These

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[9] Richard Heaps and Arthur Woolf, "The Economic Impact of Vermont's Railroad Industry on the Vermont Economy," pp. 9-29.
[10] Richard Heaps and Arthur Woolf, "The Economic Impact of Vermont's Railroad industry on the Vermont Economy," p. 39.
[11] Richard Heaps and Arthur Woolf, "The Economic Impact of Vermont's Railroad industry on the Vermont Economy," p. 21.
[12] Brinckerhoff and Fitzgerald & Halliday, Inc., "State Rail & Policy Plan, 2006," p. 41.
[13] Richard Heaps and Arthur Woolf, "The Economic Impact of Vermont's Railroad industry on the Vermont Economy," p. 21.
[14]Richard Heaps and Arthur Woolf, "The Economic Impact of Vermont's Railroad industry on the Vermont Economy," p. 27.
[15] Nancy Remsen, "Freight Trains Have Impact on Vermonters' Daily Lives," *Burlington Free Press*, August 22, 2011, accessed February 23, 2012, http://www.burlingtonfreepress.com/article/20110822/NEWS02/110821020/Freight-trains-impact-Vermonters-daily-lives.

numbers were obtained from a study published by the University of Iowa's Public Policy Center comparing the external costs of freight shipment versus truck shipment.[16]

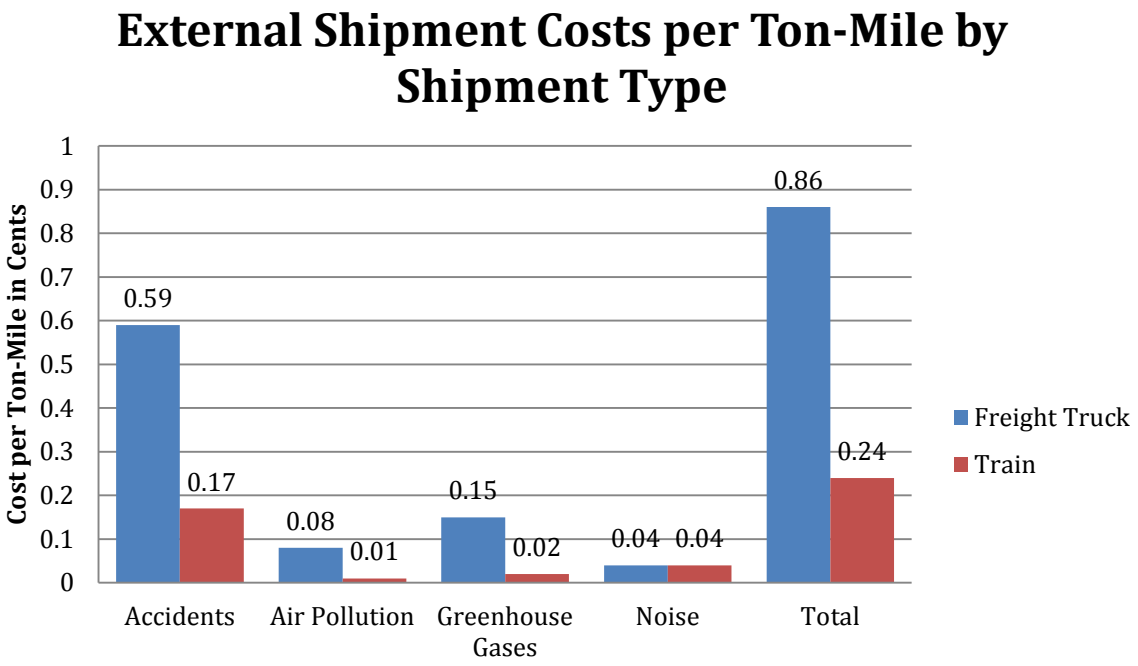

Figure 1: Bar Graph Indicating External Costs Associated with Truck Shipping versus Rail

Figure 1: Bar Graph Indicating External Costs Associated with Truck Shipping versus Rail[17]

Environmental Impacts of Railroads

According to the Inventory of U.S. Greenhouse Gas Emissions and Sinks, compiled by the U.S. Environmental Protection Agency (EPA), transportation can be held accountable for 28% of the total amount of greenhouse gases emitted in the United States. The following graph, Figure 2, taken from a U.S. Department of Transportation policy overview, represents the distribution of greenhouse gases emitted by the different forms of transportation. The graph shows that 20% of transportation emissions are from trucks and only two percent are emitted by freight rails.[18]

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[16] David J. Forkenbrock, "Comparison of the External Costs of Rail and Truck Freight Transportation," Public Policy Center, The University of Iowa, October 4, 1999, accessed April 9, 2012, http://faculty.arec.umd.edu/cmcausland/RAKhor/rakhor%20task10/forkenbrock01.pdf, pp. 13-14.

[17] David J. Forkenbrock, "Comparison of the External Costs of Rail and Truck Freight Transportation," pp. 13-14.

[18] Cristiano Facanha and Jeff Ang-Olson, "Policies to Reduce Greenhouse Gas Emissions Associated with Freight Movements," U.S. Department of Federal Highway Administration, accessed February 24, 2012, http://www.fhwa.dot.gov/policy/otps/innovation/issue1/policies.htm.

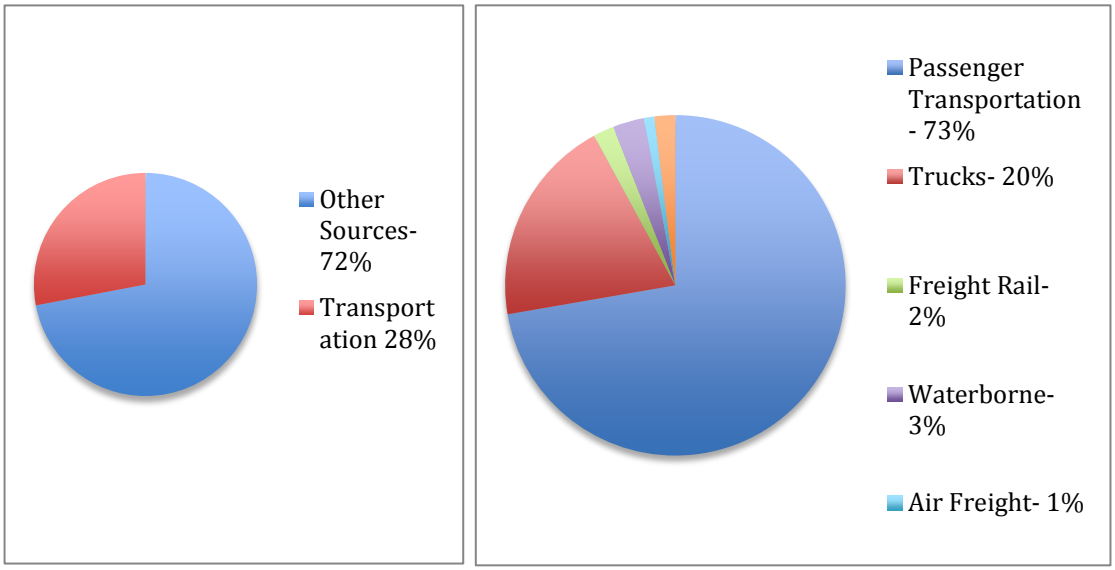

Figure 2: Greenhouse Gas Emissions by Source and Transportation Mode (2005).[19]

The EPA stated that trains typically give off three times less particulates and nitrogen oxide than trucks. Furthermore, "according to the EPA, railroads account for just 9 percent of total transportation-related gas emissions and four percent of transportation-related particulate emissions, even though they account for 42% of the nation's intercity freight ton-miles."[20]

In addition to being a more fuel-efficient mode of transportation than shipping via trucks, railroads also decrease the amount of congestion experienced on main roadways. A train in the intermodal category (the use of two or more modes to move a shipment from origin to destination)[21] can carry the same amount as 280 trucks. Shipping via railroads produces the following benefits: decreased congestion decreasing gridlock on highways, increased ability of the public to travel with ease, decreased need to reconstruct deteriorated highways, and decreased greenhouse gas emissions.[22]

Conclusion

The use of railroad in freight shipment has undeniable benefits, especially in Vermont. The benefits that rail transport offers encompass a broad spectrum including economic, environmental, and public benefits. There are also many companies in Vermont that are entirely dependent on the rail industry to distribute their product to the consumer at the lowest price, a benefit to all Vermonters. However, because of the current state of Vermont's

[19] Cristiano Facanha and Jeff Ang-Olson, "Policies to Reduce Greenhouse Gas Emissions Associated with Freight Movements."
[20] National Atlas of the United States, "Overview of U.S. Freight Railroads," January 2011, accessed February 23, 2012, http://nationalatlas.gov/articles/transportation/a_freightrr.html.
[21] William DeWitt and Jennifer Clinger, "Intermodal Freight Transportation," Committee on Intermodal Freight Transport, accessed February 27, 2012, www.trb.org/publications/millennium/00061.pdf
[22] National Atlas of the United States, "Overview of U.S. Freight Railroads."

railroad infrastructure, it is not performing to its potential. Bringing railways and bridges up to the national standard will facilitate the industry growth and increase railway traffic into Vermont, benefitting the economy and the environment.

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