Summary

Railroads are the most environmentally sound way to move freight over land. On average, trains are three to four times more fuel efficient than trucks. They also reduce highway gridlock and greenhouse gas emissions. Through the use of greener technologies and more efficient operating practices, our nation’s freight railroads are committed to even greater environmental excellence in the years ahead.

Freight Railroads and Fuel Efficiency Go Hand in Hand

Freight railroads are the environmentally friendly way to move freight:

- On average, railroads are three to four times more fuel efficient than trucks.
- Greenhouse gas emissions are directly related to fuel consumption. That means moving freight by rail instead of truck lowers greenhouse gas emissions by up to 75 percent, on average.
- Freight railroads accounted for just 0.6 percent of total U.S. greenhouse gas emissions in 2017, according to EPA data, and just 2.0 percent of transportation-related greenhouse gas emissions.
- If just 10 percent of the freight that moves by Class 7 or Class 8 (the largest) trucks moved by rail instead, fuel savings would be more than 1.5 billion gallons per year and annual greenhouse gas emissions would fall by more than 17 million tons — equivalent to removing around 3.2 million cars from the highways for a year or planting 400 million trees.

A Multi-Faceted Approach to Conserving Fuel

U.S. freight railroads’ volume in recent years has been much higher than it was in 1980, but their fuel consumption has been much lower. How did railroads do this? Through
The Environmental Benefits of Moving Freight by Rail

Steps railroads have taken individually or collectively include:

✓ Acquiring thousands of new, more efficient locomotives and removed from service thousands of older, less fuel-efficient locomotives.

✓ Increasing the amount of freight in rail cars and on trains. Thanks to improved railcar design, the increased use of specialized railcars for specific commodities, and the use of longer trains, the amount of freight railroads carried in an average train in 2018 was 3,661 tons, up from 2,923 tons in 2000.

✓ Developing and installing highly advanced computer software systems that, among other things, calculate the most fuel-efficient speed for a train over a given route; determine the most efficient spacing and timing of trains on a railroad’s system; and monitor locomotive functions and performance to ensure peak efficiency.

✓ Installing idling-reduction technologies, such as stop-start systems that shut down a locomotive when it is not in use and restart it when it is needed, and expanded the use of distributed power (positioning locomotives in the middle of trains) to reduce the total horsepower required for train movements.

✓ Providing employee training to help locomotive engineers develop and implement best practices and improve awareness of fuel-efficient operations.

Freight Railroads Fight Highway Gridlock

Railroads help reduce the huge economic costs of highway congestion:

✓ According to INRIX (a highway traffic analytics firm), highway congestion cost Americans an average of 97 hours, or $1,348, per driver in 2018 just in terms of lost time. That’s an $87 billion nationwide hit. Including other costs like wasted fuel and lower productivity would add many billions of dollars more to this total.

✓ A single freight train, though, can replace several hundred trucks, freeing up space on the highway for other motorists. Shifting freight from trucks to rail also reduces highway wear and tear and the pressure to build costly new highways.