

Norfolk Southern's Green Machine

About the Green Machine

The Green Machine, Norfolk Southern's online tool which estimates the reduction in CO₂ that will occur when goods are shipped via rail rather than by truck, is a component of NS' broad-based sustainability initiative that includes developing public-private partnerships to improve use of the nation's rail transportation network while supporting the economy; focusing on safety to benefit employees and communities; minimizing use of natural resources; and reducing, reusing and finding alternatives for commonly-used railroad materials.

The Green Machine can be accessed through Norfolk Southern's environmental Web site at <http://www.nscorp.com/footprints> and through its accessNS e-commerce portal at www.nscorp.com.

The calculator prompts the user to enter shipment volumes, along with network or lane information. Using graphic slides, the user then can gauge the emission reductions that occur as rail becomes a larger and larger part of freight movements.

Carbon emission reductions are converted into familiar terms by showing how many automobiles would have to be taken off congested highways, and how many trees would need to be planted, in order to achieve the air quality improvements equivalent to those offered by the greater use of rail transportation.

How to Operate the Green Machine

From the Green Machine's welcome page, click the green button labeled "*Click here to analyze your footprint*" to begin using the Lane Level model, which estimates the reduction in CO₂ that would occur when a given tonnage of freight is shipped a given distance by rail instead of by truck. Next, follow these three steps:

Step 1) In the field labeled "*Enter the total tons of freight shipped.*" in the upper left-hand panel of the model, enter the amount of freight you wish to simulate moving. You may leave the field labeled "*Enter average truck weight (tons)*" at its default value of 18 tons or change it to simulate the movement of more or less freight per truck.

Step 2) You may manually enter the length of haul or let the Green Machine simulate a haul between a pair of major cities of your choice. Once a length of haul is entered, or a pair of cities chosen, the estimated carbon footprint (in tons) of trucking the freight will be displayed in the lower left-hand panel of the analyzer.

Step 3) Now, see how small the carbon footprint of your hypothetical freight movements would be if the freight was moved by rail. In the upper right-hand panel of the calculator, drag the sliders to simulate moving the freight by rail rather than by truck. You may select 100% Truckload to Intermodal, or 100% Truckload to Rail, or a mixture, not to exceed 100%, of Truckload to Intermodal and Truckload to Rail.

The carbon footprint of moving the freight by rail and intermodal will be displayed in the lower center panel of the Green Machine. The ultimate CO2 reduction, along with the equivalent number of cars off the road, and the number of trees what would have to be planted to equal the CO2 reduction from moving freight by rail are shown in the lower right-hand panel of the Green Machine.

Alternatively, firms may use the Network Level model to estimate the benefits of shifting part or all of their freight transportation to rail. To use the Network Level model, click the “*Network Level*” button near the top of the Green Machine screen and enter the data requested. Help is always available from anywhere within the Green Machine by clicking the *Help* button near the top of the screen.

Green Machine Screenshots

Screenshots of the Green Machine in action begin on the following page.

Green Machine Welcome Screen

The screenshot displays a web browser window with the following content:

Carbon Emissions	
Truckload	19.8
Intermodal	6.8
Rail	5.4

Pounds of CO₂
Per 100 Ton-miles

"Railroads are the most environmentally friendly means of moving the goods that move the economy," says NS CEO Wick Moorman.

Carbon footprint is a representation of the impact your transportation network has on the environment. It measures the greenhouse gases produced to move your raw materials and finished products to the market.

The mode of transportation used within your supply chain is one of the biggest levers you have to control the size of your carbon footprint. Make the right choice and consider using rail to meet your transportation needs and reduce your carbon footprint. It is our responsibility to sustain and enhance our natural environment and our nation's economy for future generations.

Starting today learn how your transportation decisions impact your emissions.


[Click here to analyze your footprint](#)

Green Machine Lane-Level Model

The GREEN MACHINE - Windows Internet Explorer
 http://www.nscorp.com/nscorphtml/future/carbon%20footprint0407-2.html

File Edit View Favorites Tools Help

The GREEN MACHINE



THE GREEN MACHINE

Carbon Footprint Analyzer

Lane Level
 Network Level
 Help

Current Network

Step 1: Enter the total tons of freight shipped:

Enter average truck weight(tons):

Step 2: Enter the length of haul:

Enter Distance


Route Between Cities


Origin City:

Destination City:


Green Network

Step 3: What if you went green?
Move the sliders to see emissions savings

Truckload to Intermodal: 50% 

Truckload to Rail: 50% 


Emissions Profile: Current Network



Truck CO2

Footprint(tons)

Emissions Profile: Green Network



Truck
Rail
Intermodal

Footprint(tons)

What do these savings mean?

Equivalent number of cars off the road!

Equivalent number of trees Planted!

Shipping by Rail reduces emissions by tons


* The emissions analysis provided above was developed by Norfolk Southern for estimating purposes only. For a detailed analysis of actual emissions savings opportunity please contact Modalgistics at www.modalgistics.com or contact your Norfolk Southern account representative.

Green Machine Network-Level Model

The GREEN MACHINE - Windows Internet Explorer
 http://www.nscorp.com/nscorphtml/future/carbon%20footprint0407-2.html

File Edit View Favorites Tools Help

The GREEN MACHINE



THE GREEN MACHINE

Carbon Footprint Analyzer

● Lane Level
● Network Level
● Help

Current Network


Step 1: Annual freight volume(in tons)
 100000


Step 2: Set values by transportation mode:

	Avg haul(miles)	% volume
Truckload	1000	70%
Intermodal	1100	15%
Rail	1100	15%

Green Network

Step 3: What if you went green?
 Move the sliders to see emissions savings

Truckload to Intermodal: 50.00% 

Truckload to Rail: 50.00% 


Emissions Profile: Current Network


Footprint(tons)
7,937

Emissions Profile: Green Network

Footprint(tons)
3,142

What do these savings mean?

Equivalent number of cars off the road! 

Equivalent number of trees Planted! 

Shipping by Rail reduces emissions by
 4,795 tons

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