



**NS**  
**NORFOLK SOUTHERN**  
*One line, infinite possibilities.*

# **Making Connections**

## **A Holistic Approach to Sustainable Freight Transportation**

Megan Garry • Norfolk Southern Corporation • August 22, 2012

# Our Business





# Humble Beginnings



# Our Sustainability Vision



**ho • lis • tic**     *adj*     \hō-'lis-tik\

**1** : of or relating to **holism**

**2** : relating to or concerned with wholes or with **complete systems** rather than with the analysis of, treatment of, or dissection into parts <*holistic* ecology views humans and the environment as a single system>



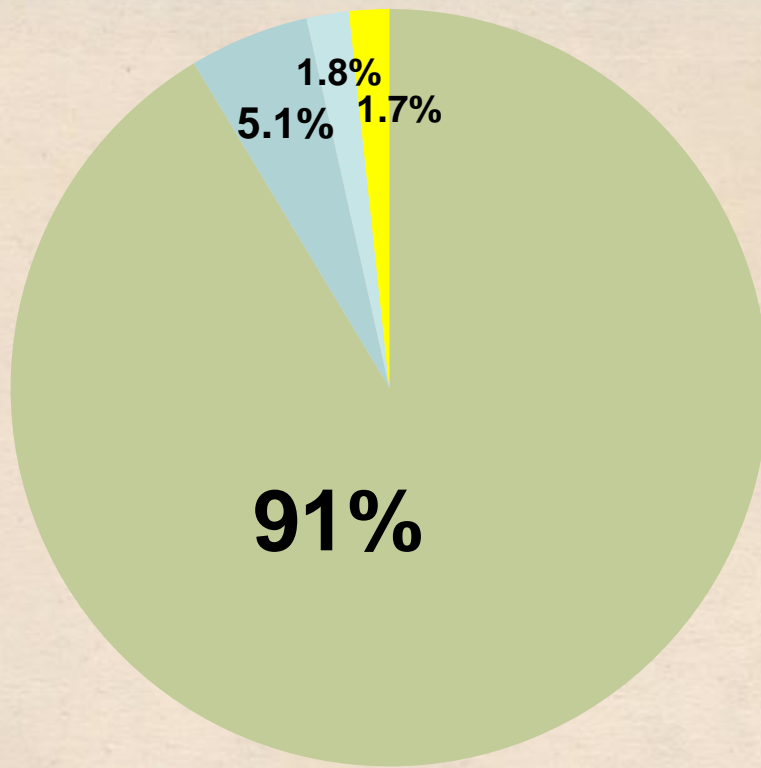


# Carbon Mitigation Strategy



# 2011 Carbon Footprint

5.2 Million Tonnes CO<sub>2</sub>e (Scope 1 + Scope 2)



- ☐ Locomotive Diesel, Off-Road Diesel, & Fuel Oil
- ☐ Electricity
- ☐ Gasoline
- ☐ Other (Coal, Natural Gas, Propane, Jet Fuel)

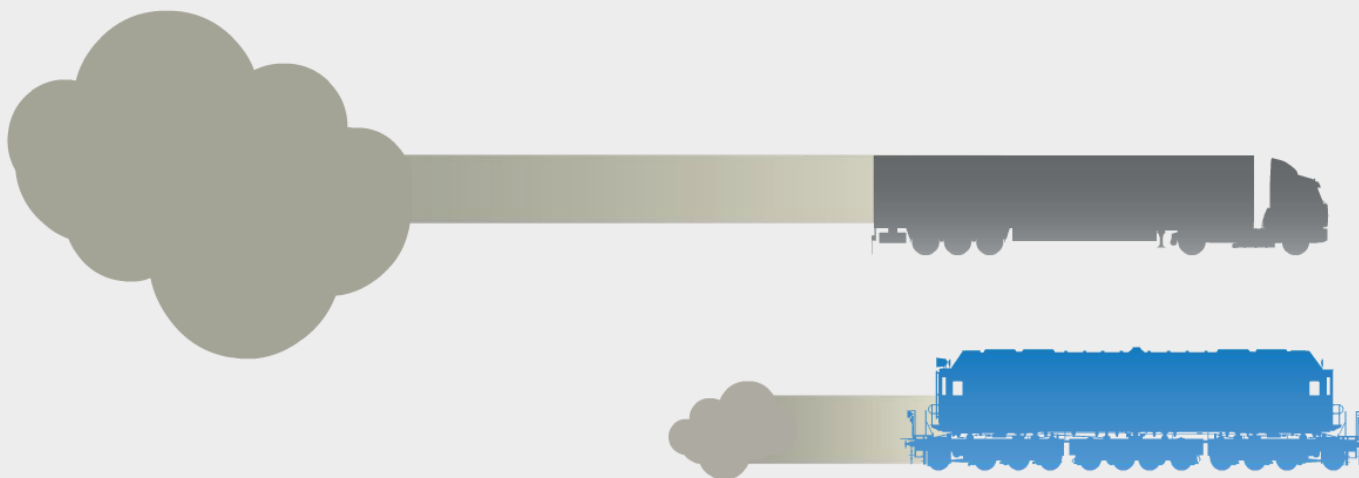


Trains on average are **4<sup>x</sup>** more fuel efficient than trucks.





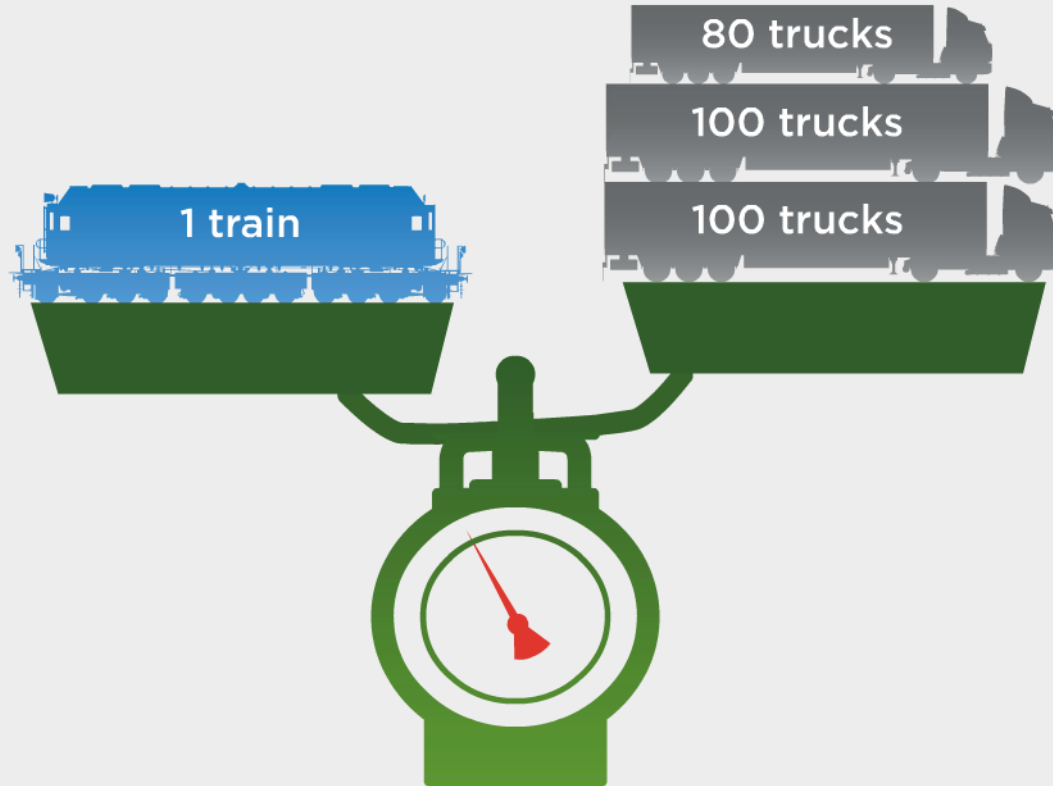
Trains on average are **4<sup>x</sup>** more fuel efficient than trucks.



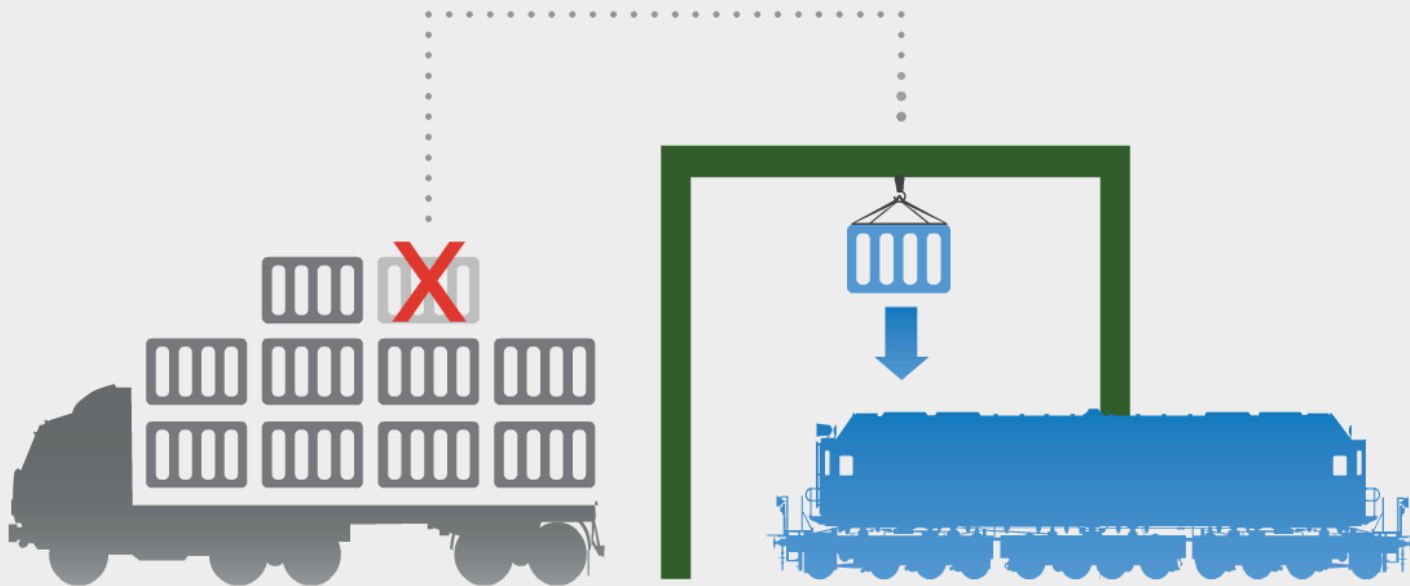
That means shipping by rail **REDUCES GREENHOUSE GASES BY 75 PERCENT** compared with shipping by truck.



A **SINGLE FREIGHT TRAIN** can carry as much freight as 280 trucks.



If just **10%** of long-haul freight now moved by truck was shipped by rail, U.S. greenhouse gas emissions would drop by more than 12 million tons annually.





In 2010, we achieved nearly 40 percent of our five-year goal,  
**REDUCING EMISSIONS BY 3.9%.**

**2009**

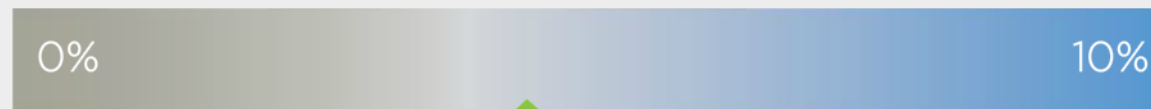
**2010**

2011

2012

2013

**2014**



**40%**  
OF GOAL

A large green arrow pointing upwards towards the progress bar.

# Our Carbon Mitigation Strategy

- **Locomotive Carbon Efficiency Initiatives**
- **Network Improvements** (*e.g., Crescent Corridor*)
- **Energy Management Program**
  - System-wide lighting retrofit
  - HVAC replacement program
- **Carbon Sequestration/Reforestation Projects**
- **Stakeholder Engagement**



# Fuel & Energy Efficiency



- On-board and dispatching technologies
- Idling reduction technologies, policies
- Top-of-rail friction modification
- Testing alternative fuel, battery, and hybrid-powered locomotives
- Improved engine technology





# Network Improvements

- New/expanded intermodal terminals
- Capacity improvements (sidings, double track, signaling)
- Clearance improvements to handle double-stack trains
- Corridor improvements to address interstate congestion
- Port access improvements
- Passenger/commuter rail projects combined with freight capacity enhancements



# Conservation/Carbon Sequestration



The Longleaf Alliance



The American Chestnut Foundation



Brosnan Forest





# Conservation Capitalism



6.04 MILLION TREES  
WILL BE PLANTED.

For NS, that represents:



=



One Employee



=



One Track Mile



=



One Locomotive





# www.nssustainability.com

