

Steel wheels on steel rail is efficiency in motion.
Efficiency motivates Norfolk Southern's success in
performance, service, and stewardship.
See how in this report.

What **EFFICIENCY** Looks Like



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PROGRESS

Q&A WITH NORFOLK SOUTHERN'S CSO



Bruno Maestri
Corporate Sustainability Officer

Bruno Maestri was named Norfolk Southern's corporate sustainability officer in June 2015. Based in NS' Washington office, Maestri also is vice president government relations. A former environmental consultant, he joined the railroad in 1995 as chief environmental officer.

Q. What is your role as corporate sustainability officer?

A. My primary role is to lead initiatives demonstrating how sustainability is embedded in the company's culture. The aim is to connect our sustainability goals with our strategic corporate goals and to the day-to-day work of our employees. Also, it's telling the story of how Norfolk Southern interacts in sustainable ways with our shareholders, customers, and the communities we serve. To me, corporate sustainability means acting responsibly in the conduct of our business. This can only enhance our ability to grow business.

Q. What is your top sustainability priority over the next year or so?

A. Priority one is to get a deeper, more formal understanding of what is most material to Norfolk Southern and our key internal and external stakeholders in terms of sustainability. From that assessment, we can refine our areas of focus and help employees better understand the important role they each play in making the railroad and the communities where we live and work stronger and more sustainable. We are part of the fabric of the communities where we operate, and we want to add value by what Norfolk Southern brings to our communities.

Q. As you think about sustainability trends within the broader society, what do you view as the greatest opportunities and challenges facing NS?

A. There is much discussion in Washington about climate change and the need to reduce carbon emissions. Studies show that freight rail is four times more fuel-efficient on average than trucks on the highway and generates 75 percent fewer carbon emissions per ton of freight. By encouraging the movement of more goods by rail instead of long-haul trucks, society actually can reduce the overall carbon footprint from transportation sources. That's one of our big opportunities. The challenge is to establish a mechanism where rail gets credit in some manner for lowering overall emissions – even if total rail emissions go up some percentage as a result of moving higher business volumes. It's important that those who regulate or score carbon emissions recognize the role that rail plays in reducing total transportation-related emissions.

Q. Do you think Norfolk Southern could ever reach a point where it runs a carbon neutral operation?

A. As we continue to grow business, offsetting our total footprint would be very challenging, but conceptually, it's possible. We've adopted technologies and operational practices that over the past five years have helped us reduce carbon emissions by more than 8 percent per revenue ton-mile of freight. Our Trees and Trains carbon mitigation program creates carbon credits sufficient to offset CO₂ emissions in a meaningful way over time. In the Mississippi Delta, a region important to our business, our Trees and Trains partnership with GreenTrees has reforested 10,000 acres with more than 6 million trees and is expected to earn carbon credits equivalent to offsetting nearly a quarter of Norfolk Southern's annual CO₂ emissions. That's significant. We could pursue other carbon-mitigation initiatives if they make sense from a business perspective. In addition, developing a mechanism whereby carbon credits could be earned for converting freight from highway to rail could make a substantial impact on offsetting our emissions.

Q. What are the next steps NS needs to take to advance the company's sustainability journey?

A. It's to focus on the things that matter most to us, and we're well on the way with those steps. Locomotive fuel efficiency is one critical area. In 2015, senior management adopted a strategic plan that for the first time creates a publicly stated goal to reduce fuel consumption over the next five years. This is key to our ongoing efforts to reduce carbon emissions. In a second critical area, we are taking steps to more effectively manage the large fleet of vehicles our people need to operate and maintain the railroad. That initiative includes the use of telematics technology to enhance driver safety, fuel economy, and operational costs. A third critical area is improving energy use in our facilities. Across our network, we're upgrading facilities with more energy-efficient lighting and other technologies to make them smarter, greener, and less expensive to operate. Our \$53-million energy-conversion project at Juniata Locomotive Shop is a good example. With facilities across 22 states, this is a major undertaking that requires identification, prioritization, and investment. It won't happen all at once, but we are committed to the task and focused on making progress, one step at a time.

"We are part of the fabric of the communities where we operate, and we want to add value by what Norfolk Southern brings to our communities."

–Bruno Maestri

PROGRESS

2015 DASHBOARD

HOW NORFOLK SOUTHERN ADVANCED SUSTAINABLE TRANSPORTATION IN 2015



Planet: Environmental performance



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Reducing emissions

- Introduced the Eco locomotive, a new class of recycled locomotives equipped with new low-emission engines that reduce NOx and particulate matter.
- Rolled out the "Sleeper," a custom engine-heating system that eliminates unnecessary locomotive idling in rail yards in winter months.
- Expanded a rebuild program to create engineless locomotives that provide emissions-free pulling power when coupled with a diesel locomotive.
- Reached 80 percent of GHG-reduction goal.
- Produced 1.9 percent fewer GHG emissions from business operations versus 2014.
- Achieved 7 percent reduction in nonlocomotive Scope 1 emissions.

Fuel efficiency

- Locomotives in revenue service moved a ton of freight an average of 410 miles on a gallon of diesel. Locomotives in all work activities consumed an average of 1.28 gallons per 1,000 gross ton-miles.
- Set a 2020 locomotive fuel-efficiency goal to reduce fuel consumption by \$80 million.
- Since 2011, improved locomotive fuel efficiency by 3 percent per 1,000 gross ton-miles.



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Planet: Environmental performance



[READ MORE](#)

Carbon Conservation

- Completed a five-year, \$5.6 million environmental partnership in the Mississippi Delta to reforest 10,000 acres of former woodlands with 6.04 million trees. The trees eventually will generate carbon credits equal to nearly 20 percent of Norfolk Southern's annual GHG emissions.
- Launched an initiative to restore 290 acres of historic wetlands in coastal South Carolina that will create wildlife habitat, restore natural water hydrology, and generate wetlands mitigation-bank credits that can be sold to support economic development.

Energy efficiency

- Generated 6 percent fewer emissions from purchased electricity sources.
- Completed lighting upgrade projects at 31 railroad facilities expected to generate annual energy and maintenance savings of \$2.1 million and reduce annual CO₂ emissions by more than 9,500 metric tons.



[READ MORE](#)



Prosperity: Economic performance



[READ MORE](#)

Financials

- Generated \$10.5 billion in railway operating revenues.
- Returned more than \$700 million in dividends to shareholders.

Economic Development

- Helped locate 61 new and expand 32 existing industries in 20 states, representing \$4.2 billion in industry investment, 6,000 customer jobs, and an estimated 88,974 additional carloads of business valued at more than \$212 million.
- Generated an employee payroll of more than \$2.3 billion and made purchases and tax payments totaling more than \$6.3 billion across its 22-state operating territory.



[READ MORE](#)



Prosperity: Economic performance



[READ MORE](#)

Rail efficiencies

- Announced a five-year strategic plan setting 2020 goals focused on achieving operating efficiencies, cost savings, and revenue growth.
- Improved composite customer service performance by 3 percent, including on-schedule delivery.

Capital investment

- Invested \$2.4 billion in capital projects to enhance customer service and grow the business.



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Supply chain value

- Purchased \$4.2 billion in supplies and equipment, generating income for more than 6,700 supplier businesses.
- Increased purchases from minority- and women-owned business suppliers by 7 percent.

Corporate philanthropy

- \$13.7 million in combined Norfolk Southern Foundation, corporate, and business giving to support human service needs, arts and culture, environment, and education in communities served by the railroad.



[READ MORE](#)



People: Social performance



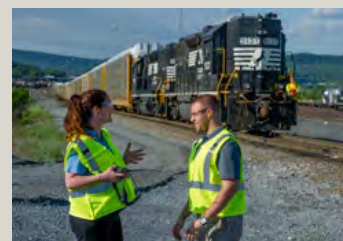
[READ MORE](#)

Safety

- Recorded a 13 percent decline in reportable employee injuries.
- Introduced new risk-factor safety training program for workforce.
- Launched telematics pilot to enhance vehicle fleet safety.
- Created a new employee safety message, "i am Coming Home," to personalize safety.

Workforce

- Established employee Diversity and Inclusion Councils in each of NS' 10 operating divisions.
- Hired record numbers of female management trainees and conductor trainees.
- Recruited military veterans, who comprised 15 percent of all new hires.
- Achieved wellness milestone, with employees taking more than 19 billion steps – equal to 497 trips over NS' 20,000 miles of rail – as part of the company's health and wellness program.



[READ MORE](#)



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Community

- Recorded more than 2,500 hours of community service through the company's formal Thoroughbred Volunteers program.
- Helped train nearly 4,800 local emergency responders in 18 states in safe response to potential incidents involving transport of commercial freight regulated as hazardous material.
- Sponsored training for 80 first responders on safe response to potential crude-by-rail incidents – part of a three-year rail industry effort in which NS so far has invested \$800,000 in training nearly 220 emergency responders who live and work in communities where crude trains operate.
- Raised public awareness about highway-rail grade crossing safety and the dangers of trespassing on railroad property, including Whistle Stop train tours in Ohio and the Carolinas, and a Train Your Brain campaign in Georgia.



PROGRESS

REPORTING & MATERIALITY

About this report

Norfolk Southern Corporation's ninth annual sustainability report discloses its significant environmental, social, and economic impacts during 2015 and the first half of 2016. The report, designed to be viewed online, offers transparency into NS' sustainability performance and is intended to help stakeholders assess NS' commitment to corporate social responsibility.

Information in this report is in accordance with the Global Reporting Initiative's G4 Core Level guidelines.

We want to hear from you: Norfolk Southern, a publicly traded enterprise headquartered in Norfolk, Va., welcomes stakeholder feedback on this report. Comments and questions may be emailed to footprints@nscorp.com

Third-party GHG emissions review

Norfolk Southern aims to provide transparency in disclosing its greenhouse gas emissions to interested stakeholders. For the fifth consecutive reporting year, NS engaged auditing firm KPMG LLP to review the railroad's GHG emissions data.

[Read KPMG's review letter and NS' 2015 GHG emissions report.](#)

More information about NS' carbon footprint and efforts to reduce emissions can be found in this report's [Planet](#) section.

NS' core sustainability issues

Norfolk Southern's sustainability vision is to perpetuate our corporate longevity and success for the benefit of our customers, investors, the communities we serve, and our people.

Topics covered in this report are considered the most relevant to achieving a healthy balance between NS' business imperatives as a publicly traded company and its environmental and social commitments as a responsible corporate citizen.

This report is structured around NS' core sustainability issues, described by the Global Reporting Initiative's G4 guidelines as material issues. NS identified core issues through an informal process that included interviews with senior management, goals outlined in the company's five-year strategic plan, and stakeholder outreach. For future reports, NS plans to conduct a formal materiality assessment involving internal and external stakeholders.

ISSUES THAT MATTER MOST



Planet

- Locomotive fuel efficiency
- Diesel emissions
- Environmental partnerships
- Energy-efficient operations



Prosperity

- Shareholder value
- Customer service
- Resource stewardship
- Community philanthropy
- Corporate integrity



People

- Workplace safety
- Safe operations in communities
- Healthy, well-trained workforce
- Diversity and Inclusion

NS' sustainability chain

Norfolk Southern's sustainability program is overseen by the Environmental Policy Council, a committee comprising senior management, department heads, and the corporate sustainability officer. The council chair is appointed by and reports directly to the CEO, who chairs the company's board of directors.

In 2015, Jim Hixon, executive vice president law and corporate relations, was appointed council chair. In addition to sustainability, the council oversees the company's compliance with state and federal environmental rules and regulations and with corporate policies regarding environmental issues.

The council reviews best practices in corporate sustainability and examines what industry peers are doing to reduce business impacts on the environment. The council also ensures that all operations departments are aware of and contributing to the company's sustainability efforts.

FORWARD-LOOKING STATEMENTS

Certain statements in this sustainability report are "forward-looking statements" within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, as amended. These statements relate to future events or our future financial performance and involve known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance, or our achievements or those of our industry to be materially different from those expressed or implied by any forward-looking statements.

In some cases, forward-looking statements can be identified by terminology such as "may," "will," "could," "would," "should," "expect," "plan," "anticipate," "intend," "believe," "estimate," "project," "consider," "predict," "potential," "feel," or other comparable terminology. We have based these forward-looking statements on our current expectations, assumptions, estimates, beliefs, and projections. While we believe these expectations, assumptions, estimates, beliefs, and projections are reasonable, such forward-looking statements are only predictions and involve known and unknown risks and uncertainties, many of which involve factors or circumstances that are beyond our control. These and other important factors, including those discussed under "Risk Factors" in our latest Form 10-K, as well as our subsequent filings with the Securities and Exchange Commission, may cause actual results, performance, or achievements to differ materially from those expressed or implied by these forward-looking statements.

The forward-looking statements herein are made only as of the date they were first issued, and unless otherwise required by applicable securities laws, we disclaim any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise. Copies of our press releases and additional information about us are available at www.norfolksouthern.com, or you can contact Norfolk Southern Corporation Investor Relations at 757-629-2861.

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STAKEHOLDER ENGAGEMENT

Engaging stakeholders

Norfolk Southern recognizes the importance of engaging stakeholders and uses their feedback to take action and improve performance. Following is a list of the company's key stakeholders, how the company interacts with them, and topics discussed in 2015.

STAKEHOLDER GROUP	WAYS NS ENGAGES	KEY TOPICS IN 2015
EMPLOYEES	<ul style="list-style-type: none"> • Online Employee Resource Center/Operations Web Portal • Daily email of NS/industry news • 24/7 NSTV internal television station • CEO town hall meetings/executive leadership visits • Online CEO Q&A forum • Daily job and safety briefings • Local safety and service committee meetings 	<ul style="list-style-type: none"> • Safety and customer service • Renovations at Norfolk and Atlanta corporate offices to consolidate office locations from three to two to streamline business operations and enhance workplace environments • Enhanced online career/learning center • Diversity & inclusion • Efforts to hire more women in management and craft positions
CUSTOMERS	<ul style="list-style-type: none"> • Electronic survey of NS' top 200 to 250 customers • Operations Service and Support group • Service updates on NS' corporate website • Visits/calls by marketing representatives • On-site safety and service visits by Transportation Department supervisors and train crews • Customer forum outreach by senior leadership, operating personnel, and account representatives 	<ul style="list-style-type: none"> • Service issues related to network congestion, particularly on NS' Northern Region • Response to weather-related service issues, including severe flooding in South Carolina • Competitive pricing • Conversion of freight from highway to rail • Reducing transportation-related carbon emissions
SHAREHOLDERS/ INVESTORS	<ul style="list-style-type: none"> • Quarterly earnings calls and annual meeting • Senior leadership on-site meetings and office calls with large investors • Investor relations office • Corporate website investors' page • Investor days • Industry conferences • Shareholder proposals 	<ul style="list-style-type: none"> • Creating long-term shareholder value • NS stock performance • Revenue and expense trends • Canadian Pacific Railway's unsolicited proposal to acquire NS (dropped in 2016)

STAKEHOLDER GROUP	WAYS NS ENGAGES	KEY TOPICS IN 2015
COMMUNITIES	<ul style="list-style-type: none"> • Training for local police, fire, and EMS on safe response to potential rail incidents • Outreach by government relations and public relations teams • Thoroughbred Speakers Bureau • Norfolk Southern Foundation community grants • Employee volunteerism, including Thoroughbred Volunteers 	<ul style="list-style-type: none"> • Highway-rail grade crossing safety • Trespasser prevention • Safe transport of hazardous materials, including crude oil • Locomotive engine-idling • Local traffic delays caused by trains stopped at railroad crossings • Closure of corporate office building in Roanoke, Va., to consolidate office locations from three to two to streamline business operations
GOVERNMENT	<ul style="list-style-type: none"> • Government relations teams in Washington and states where NS operates • Ongoing dialogue with regulators and policy-makers 	<ul style="list-style-type: none"> • Safe transport of hazmat • Implementation of positive train control • Balanced industry regulation • Public-private partnerships to reduce locomotive diesel emissions
NONGOVERNMENTAL ORGANIZATIONS	<ul style="list-style-type: none"> • Environmental partnerships, including carbon mitigation and water quality in the Chesapeake Bay watershed • Outreach by CSO and corporate sustainability group • Funding for clean coal research and development • Norfolk Southern Foundation grants to support education, diversity, and inclusiveness 	<ul style="list-style-type: none"> • Wetlands protection • Water quality in the Chesapeake Bay watershed • Carbon mitigation through NS' Green Trees program • NS' Lambert's Point Coal Terminal • Alternative fuel technologies
INDUSTRY/SUPPLIERS	<ul style="list-style-type: none"> • Active participation in the Association of American Railroads, the rail industry trade organization • Co-sponsor of annual Railroad Sustainability Symposium • Page for prospective suppliers on NS' corporate website • Supplier partnerships on innovative business solutions 	<ul style="list-style-type: none"> • Reducing the environmental impacts of railroad operations • Locomotive fuel efficiency • Safety of railroad operations • Supplier sustainability practices • Increasing supplier diversity

Want to know more?

[Norfolk Southern Foundation, corporate, and business grants in 2015](#)

[NS 2015 corporate and Good Government Fund political contributions](#)

[NS 2015 corporate contributions to trade associations](#)



PROGRESS

GOVERNANCE

Good Governance

Norfolk Southern is committed to leadership in good corporate governance in the workplace, the marketplace, and the communities where the company operates.

The company holds its board of directors, senior managers, and employees to the highest standards of ethical behavior. The company's Thoroughbred Code of Ethics and SPIRIT values – safety, performance, integrity, respect, innovation, and teamwork – provide the foundation for business conduct and relationships with shareholders, customers, co-workers, suppliers, competitors, and other stakeholders.

Guided by these core principles, NS creates long-term economic, environmental, and social value that benefits the company and its stakeholders.

More information on governance

Visit Norfolk Southern's corporate website for details on:

[Board of Directors](#)

[Risk Management](#)

[Thoroughbred Code of Ethics](#)

[Governance Documents](#)

Leadership changes

During 2015 and early 2016, Norfolk Southern transitioned smoothly to a new senior executive management team that reflects the company's tradition of developing and promoting leaders from within.

- **[Jim Squires](#)**, a 23-year NS veteran, became the company's new chief executive officer, June 1, 2015, and chairman of the board of directors, Oct. 1, 2015. During his first six months as CEO, Squires led development and implementation of a five-year strategic plan and oversaw a return of NS' freight rail service to near all-time best performance levels.
- **[Alan Shaw](#)**, who joined NS in 1994, became executive vice president and chief marketing officer, May 16, 2015.
- **[Cindy Earhart](#)**, an NS employee since 1985 and named executive vice president administration in 2013, assumed the additional duties of chief information officer, Oct. 1, 2015.
- **[Mike Wheeler](#)**, who joined NS in 1985 as a research engineer, became executive vice president and chief operating officer, Feb. 1, 2016.

PROSPERITY



PROSPERITY

A MESSAGE FROM OUR CEO



Jim Squires
Chairman, President and CEO

Thanks for visiting Norfolk Southern's 2016 Sustainability Report and for your interest in learning more about what efficiency looks like at our railroad.

Efficiently moving freight trains across our 22-state network is a cornerstone of sustainability at Norfolk Southern. It's about turning challenges into daily opportunities – keeping our people and communities safe, providing unequalled customer service, and being a good steward of the resources that contribute to our success as a business enterprise. Providing reliable, cost-efficient, and environmentally friendly rail service ensures that we remain a vital link in the nation's freight transportation network for years to come, efficiently moving the goods that keep our economy moving.

In the nine years since Norfolk Southern adopted a formal sustainability program – we were the first large U.S. railroad to appoint a corporate sustainability officer – we have embedded sustainable practices into our corporate strategy. We recognize that sustainability is not something you just bolt on: To be most impactful, sustainability has to be entwined in daily operations in ways that advance our business goals and honor our environmental and social commitments as a responsible corporate citizen.

Examples of how we achieve that balance are found in this report. In 2015, for instance, we rolled out a new class of low-emission Eco locomotives, recycling older frames to save on costs while helping communities comply with their commitments and obligations under the federal Clean Air Act.

**“Efficiently moving freight trains across our 22-state network
is a cornerstone of sustainability at Norfolk Southern.”**

–Jim Squires

For the first time, we adopted a locomotive fuel-efficiency goal, setting a 2020 target to reduce diesel consumption equal to \$80 million annually. Achieving that goal will help us meet another key objective – lowering greenhouse gas emissions from locomotive operations, our biggest environmental impact. To reduce that impact, we are investing in engine-handling technologies, an innovative locomotive rebuild program, and network efficiencies that in turn reduce our bottom-line expenses.

Norfolk Southern also made gains in social performance in 2015. Workplace injuries declined as we introduced a new safety theme, “i am Coming Home,” that makes safety personal. For the second consecutive year, we hired record numbers of women in our management trainee and conductor trainee programs. Along with that, we formed employee diversity and inclusion councils in each of the company’s 10 operating divisions, recognizing that our future success depends on recruiting a workforce that reflects the diversity of the communities we serve.

2020 TARGET SET TO REDUCE
DIESEL CONSUMPTION
EQUAL TO \$80 MILLION
ANNUALLY

RECORD NUMBERS
OF WOMEN HIRED
IN OUR MANAGEMENT
TRAINEE & CONDUCTOR
TRAINEE PROGRAMS

WORKPLACE INJURIES
DECLINED AS WE INTRODUCED
A NEW SAFETY THEME,
“I AM COMING HOME.”
THAT MAKES SAFETY PERSONAL

Since my appointment as CEO in 2015, Norfolk Southern has adopted a five-year strategic plan that further integrates sustainability into business operations. The plan focuses on the three pillars of our business model: safety and service, stewardship of resources through operating efficiencies, and growth. To be sustainable as a business enterprise, we have to deliver on each of these strategic priorities.

With a business history approaching two centuries, we realize that meeting the service needs of our customers is the key to longevity. By operating safely, we help ensure a successful future for our customers, our communities, and ourselves.

Under our corporate umbrella, we are stewards of many resources: our people, our physical assets, and all the goods and services that we consume as a business. Given the large resource footprint that is characteristic of our company and the rail industry – the tracks, trains, and facilities across our operating territory – it is critical that we remain focused on being a conscientious caretaker of those resources.

Norfolk Southern traces its roots to a small railroad in South Carolina that began operating in the 1830s, the earliest days of railroading. Now, as we embrace the challenges and opportunities of a 21st century global marketplace, we are committed to achieving industry leadership in sustainability. We want to be a good steward of the environment and drive our business forward at the same time, a formula that spells success for us and for our key stakeholders – investors, customers, employees, communities, suppliers, industry partners, and government agencies.

At Norfolk Southern, that’s what we call efficiency.



Jim Squires
Chairman, President and CEO

PROSPERITY

2015 STRATEGY & PERFORMANCE SCORECARD

REPORTED OPERATING
REVENUE OF
\$10.5 BILLION

ADOPTED
FIVE-YEAR
STRATEGIC PLAN
FOR OPERATIONS

PAID \$700+
MILLION
IN DIVIDENDS

Strategic plan drives service, efficiency, growth

In December 2015, Norfolk Southern announced a five-year strategic plan that sets targets for the company's economic performance through 2020. Developed by Jim Squires, who became CEO June 1, along with the senior management team and board of directors, the plan followed a comprehensive evaluation of the company's business model.

The plan is based on the core competencies of NS' business: safety and service; revenue growth; and stewardship of resources through productivity and operating efficiencies. The conservative and flexible plan enables the company to make adjustments to meet performance targets amid changing economic cycles and business markets.

The aim is to achieve ongoing operational efficiencies that result in a faster, more fluid, and lower-cost railroad. Improving network velocity enables NS to deliver superior service, create track capacity for volume growth, and generate cost savings that benefit the bottom line. A key target is to achieve an annual operating ratio below 65 percent. The ratio is a measure of operating expenses as a percentage of total revenue – the lower the ratio, the better.



The plan's focus areas include:

- Managing the workforce and facilities – including yards, terminals, and rail lines – based on business market demands. Streamlining operations around NS' coal business, which has declined in volume over the past four years, is a key part of the plan.
- Reducing the size of the locomotive and freight car fleets. The strategy includes replacing older, less reliable locomotives with new units and continuing NS' innovative locomotive rebuild program to enhance the efficiency and reliability of its road fleet.
- Improving locomotive fuel efficiency through a combination of onboard energy-management technologies, such as LEADER, improved network velocity, and operation of fewer locomotives.

KEY 2020 TARGETS OF FIVE-YEAR PLAN

Operating ratio:

BELOW 65%

Productivity savings:

\$650 MILLION

Locomotive fuel efficiency savings:

\$80 MILLION

Capital spending:

17% OF REVENUE



Learn More Details

More information about Norfolk Southern's five-year strategic plan and 2015 business highlights can be found on its corporate website and in filings with the Securities and Exchange Commission.

[2015 Annual Report and Form 10-K](#)

[Norfolk Southern SEC filings](#)

Organizational changes generate efficiencies, growth opportunities

Norfolk Southern made organizational changes during 2015 that streamlined operations and created opportunities to grow the business. In three of the most significant, the company:

- **Consolidated corporate office** locations from three to two. NS closed its Roanoke, Va., office building and moved approximately 500 job positions to NS' corporate headquarters office in downtown Norfolk and its operations office in Midtown Atlanta. The move reduces operating costs, creates opportunities for employee career development and advancement, and generates business benefits by collocating employees within the same departments into single locations.
- **Restructured Triple Crown Services** to focus the NS subsidiary's business on door-to-door movement of automobile parts. Based in Fort Wayne, Ind., Triple Crown Services specializes in the use of RoadRailer® trailers that move on road and rail. The restructuring reduces operating costs and achieves operating efficiencies by channeling its nonauto parts business onto NS' conventional intermodal network.
- **Acquired a 282-mile mainline** stretch of track in Pennsylvania and New York from the Delaware & Hudson Railway. The investment strengthens NS' competitive position in the Northeast and opens opportunities for long-term growth, in particular for intermodal, automotive, and energy markets and for business shared with short line railroad partners.

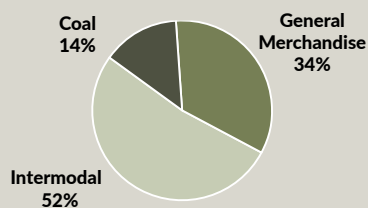
STRONG NETWORK SUPPORTS FUTURE GROWTH

NORFOLK SOUTHERN'S NETWORK INTERFACES WITH:

- More than 50 percent of U.S. population, manufacturing, and energy consumption
- Estimated 50M+ long-haul truck shipments in our service area*
- Extensive port access

VOLUME MIX

(trailing 12-months 3/31/16)



*Represents 500 miles or more

~20,000

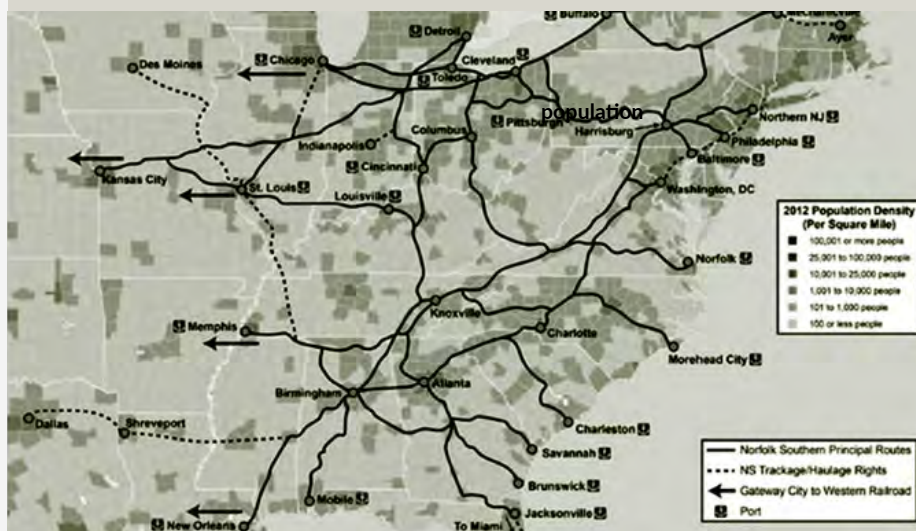
Route Miles of Track

22 States

Served by Network

43 Ports

Served by Network



Creating shareholder value

In 2015, Norfolk Southern returned more than \$700 million to shareholders in dividend payouts, representing a 6 percent increase in dividends per share for the year. Further enhancing shareholder value, NS repurchased \$1.1 billion of company stock to retire 11.3 million shares.

Through 2015, NS has paid dividends for 134 consecutive quarters – every quarter since the company's inception in 1982. Dividend increases have produced a 10-year compound annual growth rate of 17 percent.

2015 ECONOMIC IMPACT BY THE NUMBERS

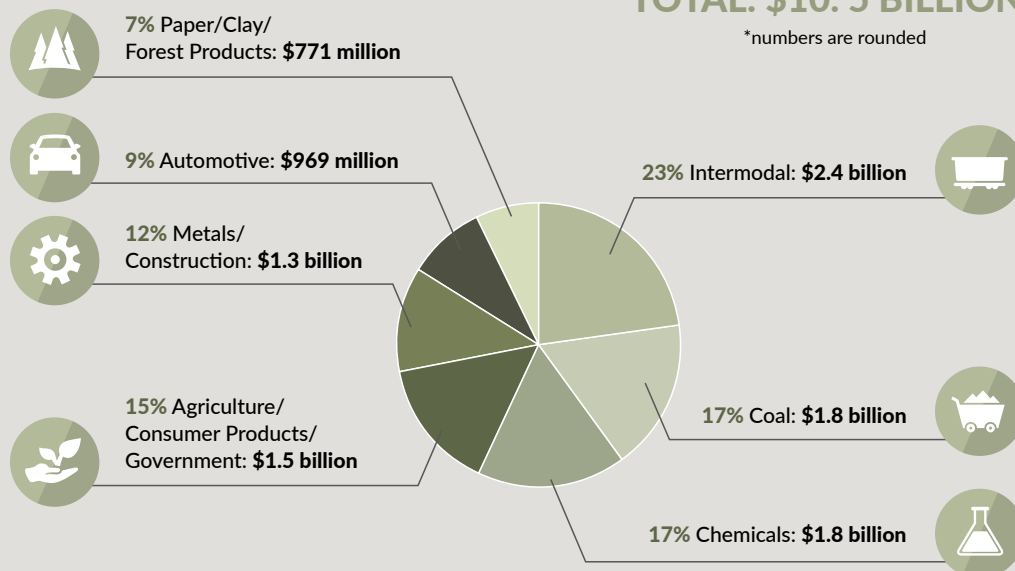
(Numbers in millions, except per-share amounts)

For the year	2013	2014	2015
Railway operating revenues	\$11,245	\$11,624	\$10,511
Net income	\$1,910	\$2,000	\$1,556
Dividends per share	\$2.04	\$2.22	\$2.36
Dividend payout ratio (as % of net income)	33%	34%	46%
Stockholders' equity	\$11,289	\$12,408	\$12,188
Debt-to-total capitalization ratio	45.4%	42%	45.3%

2015 RAILWAY OPERATING REVENUES BY MARKET GROUP

TOTAL: \$10.5 BILLION*

*numbers are rounded



PROSPERITY

2015 CUSTOMER SERVICE SCORECARD

IMPROVED
COMPOSITE
SERVICE

3%

ACHIEVED NEAR
**RECORD LEVELS
OF SERVICE**
BY 4Q

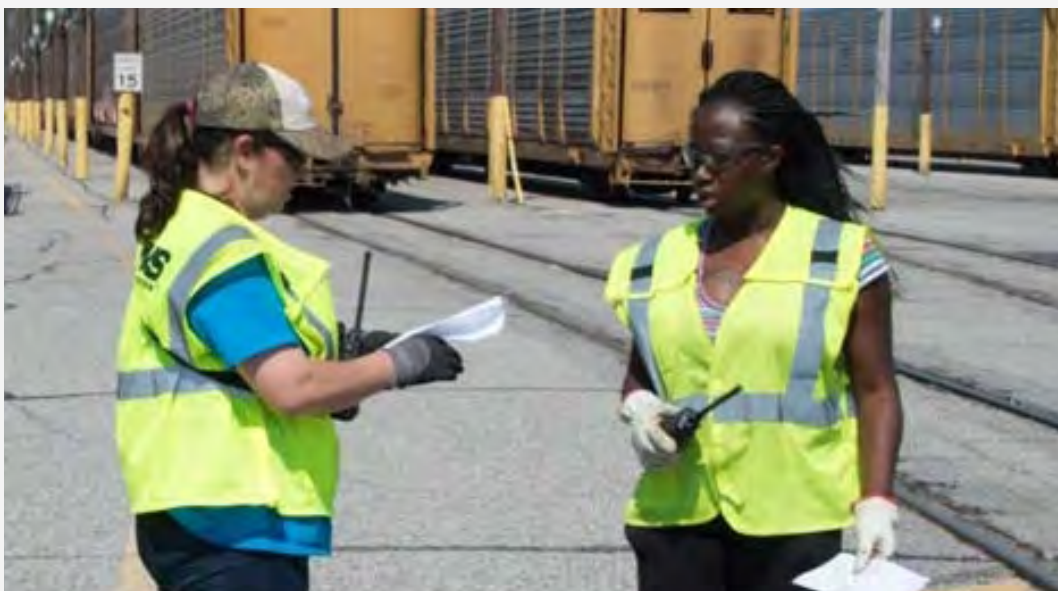
ADOPTED LONG-TERM
INITIATIVES TO
**ENHANCE
CUSTOMER SERVICE**

Measuring customer service

As a freight rail transportation company, Norfolk Southern's success hinges on customer service. NS' daily goal is to provide on-time, consistent, and reliable delivery of customers' goods, which helps them achieve their business goals.

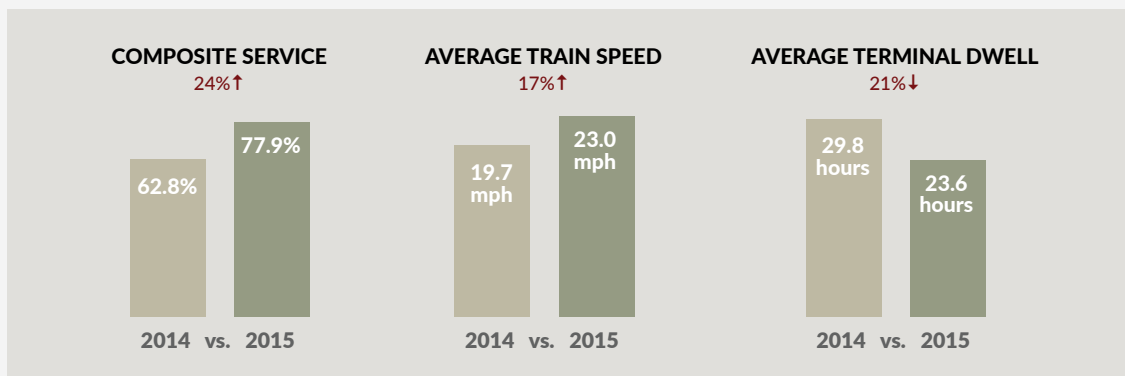
After a challenging 2014, NS returned service levels to near record-best highs in 2015. As a result of ongoing operational improvements, NS boosted its fourth-quarter service performance by double digits compared with the same period in 2014.

To ensure customer expectations are met, NS uses three primary performance metrics – composite service, train speed, and terminal dwell. They offer a good overview of how well the company is meeting schedules and using assets. The metrics are updated weekly and shared with employees across the company, allowing the workforce to track progress and performance.

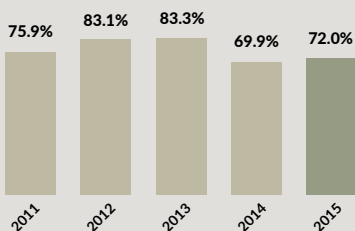


NEAR RECORD SERVICE LEVELS IN 2015

4Q 2014 vs. 4Q 2015



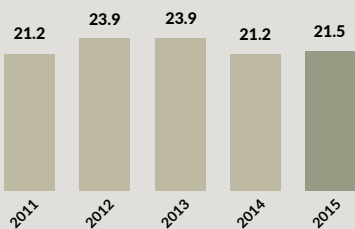
2015 COMPOSITE SERVICE IMPROVED 3%



All NS shipments have a trip plan, similar to an itinerary for an airline flight. Composite service performance combines three metrics: the percentage of trains arriving on time as scheduled on the trip plan; the percentage of customer carload pickups and set-outs executed as scheduled; and the percentage of customer carloads making scheduled connections for delivery.

2015 TRAIN SPEED IMPROVED 1%

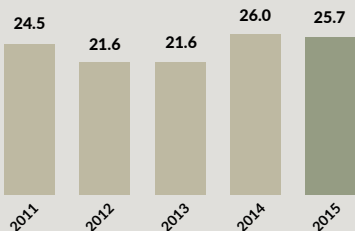
(average mph)



Train speed provides a view of how smoothly and efficiently trains move across the network. A high-velocity network improves customer delivery times and lowers operating costs. For example, the company needs fewer locomotives and rail cars to move the same amount of freight and can add network capacity without building additional tracks.

2015 TERMINAL DWELL TIME IMPROVED 1%

(average hours)



NS moves freight cars safely and as quickly as possible to achieve on-time delivery. As they move across the system, freight cars are classified and assembled into trains at terminals based on destination. Dwell time measures how long they remain in a terminal before departing on an outbound train. The shorter the time, the better.

Taking steps to improve customer service

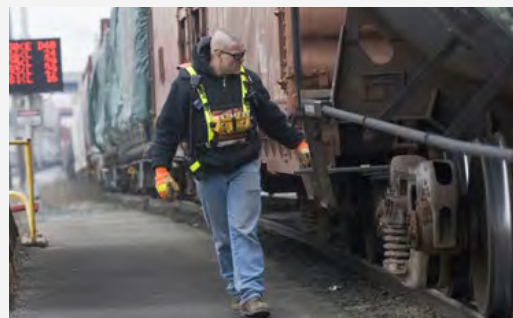
From yard expansions and innovative technologies to a new locomotive reliability team, Norfolk Southern in 2015 continued to take action that improves customer service and the company's long-term sustainability.

The following are highlights.

Moorman Yard expansion

Norfolk Southern began implementing network changes to take advantage of a \$160 million expansion completed in late 2014 that nearly doubled the size of Moorman Yard in Bellevue, Ohio. Now capable of handling 3,000 rail cars daily, the facility has enabled NS to reduce car handling and switching, route miles, and delivery times – by as much as two days for some customers.

The Bellevue terminal, NS' largest "hump" classification yard, is strategically located along a rail corridor that connects consumer-rich markets between Chicago and New York. The expansion has enabled NS to consolidate car handlings into fewer yards and to build longer trains. In one measure of efficiency gains, car handlings in 2015 were reduced by nearly 200 cars a day, generating annualized savings approaching \$14 million.



Bellevue's added capacity has created opportunities to grow business volumes across NS' Northern Region and in other key network hubs. It also has improved network resiliency, providing more flexibility to reroute traffic and minimize delays during winter storms affecting Chicago and the Northern Region.

More intermodal capacity

NS' intermodal network links shippers to supply chains that span the globe, providing safe, fast, and efficient rail service to ocean carriers, third-party logistics firms, truckload, less-than-truckload, and parcel carriers. As intermodal volumes grow, NS continues to improve processes, employ innovative technologies, and make strategic capital investments to increase capacity and enhance service.



In 2015, NS completed an expansion of its Rutherford Intermodal Facility near Harrisburg, Pa., adding new loading, unloading, and support tracks and increasing parking capacity to handle more traffic volumes.

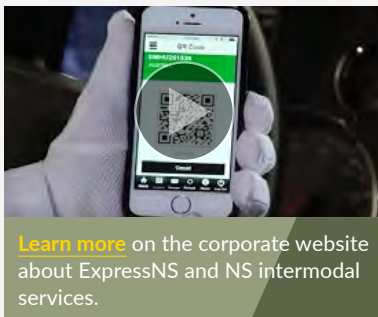
NS also completed improvements to its Calumet Intermodal Facility in Chicago, including adding a lift track, support track capacity, and parking. These enhancements improve NS' ability to serve customers in the nation's busiest rail hub.

Industry-leading technologies

NS began rolling out technology upgrades in 2015 that make doing business with the railroad easier and faster. The single largest effort, scheduled for completion in early 2017, involves a redesign of accessNS, the company's main customer e-commerce portal. Another significant initiative is the railroad's new optimized intermodal terminal operating system, including an industry-first mobile app for drayage truckers. At automotive distribution facilities, NS began installing a high-tech optical scanning system that gives auto customers and drayage drivers a real-time view of vehicle shipments.



To ensure these next-generation technologies meet customer needs, NS put customers in the driver's seat. The company used customer surveys, recruited shipping company volunteers for input on user experience, and rode along with drayage truckers at NS intermodal facilities in Chicago and Atlanta to better understand their needs and concerns.



ExpressNS mobile app speeds business for intermodal shippers

In 2015, Norfolk Southern introduced ExpressNS, an industry-first mobile phone app that speeds truck drivers' pickup and delivery of trailers and containers at NS intermodal facilities. These drayage truckers provide valuable first- and last-mile service for customers' freight. Moving them through NS' intermodal facilities more quickly means less idling, reduced fuel burn and costs, and reduced carbon emissions.

The mobile app and other technologies improve operating efficiencies at intermodal facilities and make them "greener."

These improvements include express lanes and automatic gate systems outfitted with high-resolution cameras and optical scanners for faster, more efficient processing of drayage trucks.

Teaming up for locomotive reliability

A new locomotive reliability group formed in 2015 has one mission: to keep locomotives on the road and out of repair shops. Based in Atlanta, a group of four teams helps mechanical shop employees diagnose locomotive troubles and reduce repeat locomotive failures.

NS based the concept in part on a model developed by Delta Air Lines to assist its airplane mechanics with repairs. Locomotives have event recorders – similar to an airplane's "black box" – that shop personnel can download and send to the reliability teams to troubleshoot problems. Each team specializes in one of NS' four primary road locomotive models.

"The reliability teams spend their days studying the circuitry, the computers, and the systems on one model of locomotive – they know every nut and bolt and wire," said Doug Corbin, NS assistant vice president mechanical. "They help those local mechanics dig down to the bottom of the problem."

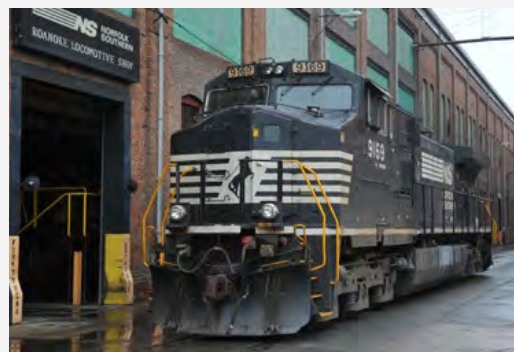
Since forming the group, NS has seen a drop in repeat locomotive failures and an increase in the mean days between repair-shop visits for individual locomotives. Each team has developed standardized work procedures that provide a checklist for shop employees to follow when a locomotive arrives for repair and before it re-enters service.



Investing in reliable pulling power

Norfolk Southern is making significant investments to improve the reliability of its locomotive fleet. These initiatives include:

- A rebuild program to convert aging Dash 9 locomotives from DC to AC power, a process that transforms the 1990s and early 2000s units into like-new locomotives at about half the cost of buying new. Using AC-powered traction motors boosts the locomotives' pulling power, particularly at slow speeds, and enhances fuel efficiency. NS owns about 1,200 of the Dash 9s, currently comprising nearly half of the railroad's long-haul road fleet.
- A plan to purchase 50 new AC locomotives, including 47 units in 2016 equipped with Tier 4 emissions technology, meeting EPA's latest and most stringent emissions standards. GE Transportation, the locomotive manufacturer, says the high-performance locomotives cut emissions of nitrogen oxides and particulate matter by at least 70 percent compared with Tier 3 locomotives – one more way that NS helps customers reduce their supply-chain emissions.



PROSPERITY

2015 ECONOMIC ENGINE SCORECARD

61 NEW INDUSTRIES	32 INDUSTRY EXPANSIONS	\$4.2 BILLION INDUSTRY INVESTMENT
\$8.7 BILLION NS PAYROLL, PURCHASES, AND TAXES	88,974 ADDITIONAL CARLOADS	6,193 NEW CUSTOMER JOBS

Helping communities prosper

In 2015, Norfolk Southern contributed to industrial development projects that created jobs and business growth across 20 of its 22 operating states.

Working with customers and local and state economic development officials, NS helped locate 61 new and expand 32 existing industries along its rail lines. These projects pumped more than \$4.2 billion in industry investment into communities large and small, generated more than 6,000 new customer jobs, and added to NS' top-line growth – an estimated 88,974 additional carloads of business valued at more than \$212 million.

The two largest projects in terms of jobs and investment involved automotive assembly plants: Mercedes-Benz USI invested \$2 billion to expand production of its C-class models at Vance, Ala., while Ford Motor Co. invested \$1.1 billion to expand production of F-150 pickups at its Claycomo, Mo., plant.

Agricultural projects served by NS' grain franchise – including elevators, feed mills, and food processing plants – accounted for nearly one-quarter of the rail carload growth. While U.S. energy production slowed in 2015, 12 projects associated with NS' ethanol, natural gas, crude oil, wood pellet, and coal markets were among 19 expected to generate more than \$3 million each in annual railroad revenues.



“Our goal is to help communities be successful. If our communities are doing well from an industrial standpoint, it bodes well for us.”

–Jason Reiner,
assistant vice president industrial development

NS' 2015 Economic Footprint

The positive economic impacts generated by Norfolk Southern's business operations ripple through states and local communities across the eastern U.S. In 2015, NS financed a payroll of more than \$2.3 billion and paid taxes and made purchases totaling more than \$6.3 billion.

State	Total Number of Employees Paid ^(A)	Total Payroll ^(A) (in thousands)	Total Taxes, Purchases, & Other Payments ^(B,C) (in thousands)	Miles of Road Operated 12/31/15	Industry Investment (in thousands)	New Customer Jobs	Carloads
Alabama	1,779	\$117,916	\$107,572	1,304	\$2,213,000	1,520	3,099
Delaware	132	8,738	22,601	203	\$60	0	453
Florida	200	11,819	73,316	149			
Georgia	5,040	374,214	467,857	1,719	\$124,090	254	10,230
Illinois	1,642	109,656	1,466,857	1,256	\$32,853	33	5,338
Indiana	2,689	187,124	151,560	1,441	\$141,550	181	2,490
Iowa	15	822	6,267	43	\$375	3	6,000
Kentucky	1,190	80,184	105,789	429	\$120,024	82	1,110
Louisiana	85	4,970	8,822	76			
Maryland	158	9,834	57,804	269	\$2,390	0	386
Michigan	778	54,702	49,546	487	\$3,630	6	2,815
Mississippi	276	16,919	20,737	211	\$250	15	4,000
Missouri	636	40,217	130,053	409	\$1,110,366	3,518	2,752
New Jersey	212	14,329	96,037	931	\$80,000	22	3,800
New York	496	30,084	85,989	890	\$10,000	1	1
North Carolina	1,321	85,052	359,951	1,193	\$54,452	144	8,073
Ohio	4,215	282,420	613,953	2,142	\$52,557	105	9,596
Pennsylvania	5,295	348,619	952,850	2,406	\$97,027	63	23,209
South Carolina	722	47,803	43,256	762	\$5,050	59	1,800
Tennessee	1,834	124,814	121,799	827	\$148,815	102	1,652
Virginia	4,537	363,426	254,870	1,992	\$14,503	40	522
West Virginia	963	67,425	55,090	806	\$3,251	45	1,648
All Other	80	5,722	1,078,988	4			
Total	34,295	\$2,386,809	\$6,331,564	19,949	\$4,214,247	6,193	88,974

(A) Employment based on W-2's state of residence.

(B) Taxes include state income, property, sales and use, franchise, and other miscellaneous taxes.

(C) Total purchases includes capital items, rolling stock, joint facility, employee claims, and legal fees. Payroll is not included.

Capital Investment Generates Economic Returns

For every dollar of operating revenue generated in 2015, Norfolk Southern reinvested approximately 23 cents into capital projects to enhance service and grow the business. That investment totaled \$2.4 billion.

The company prioritizes capital investment among four strategic areas to achieve performance goals. The focus is to:

- Maintain existing and purchase new assets, including rail and track infrastructure, locomotives, and freight cars.
- Ensure consistent and reliable customer service.
- Improve and enhance operational efficiencies and productivity.
- Facilitate growth in targeted markets.

While strengthening NS' franchise, these investments create a multiplier of economic benefits for communities across the railroad's operating network. They provide income to NS suppliers and their employees, generate tax revenues for state and local governments, and create an economic climate that supports jobs and development.

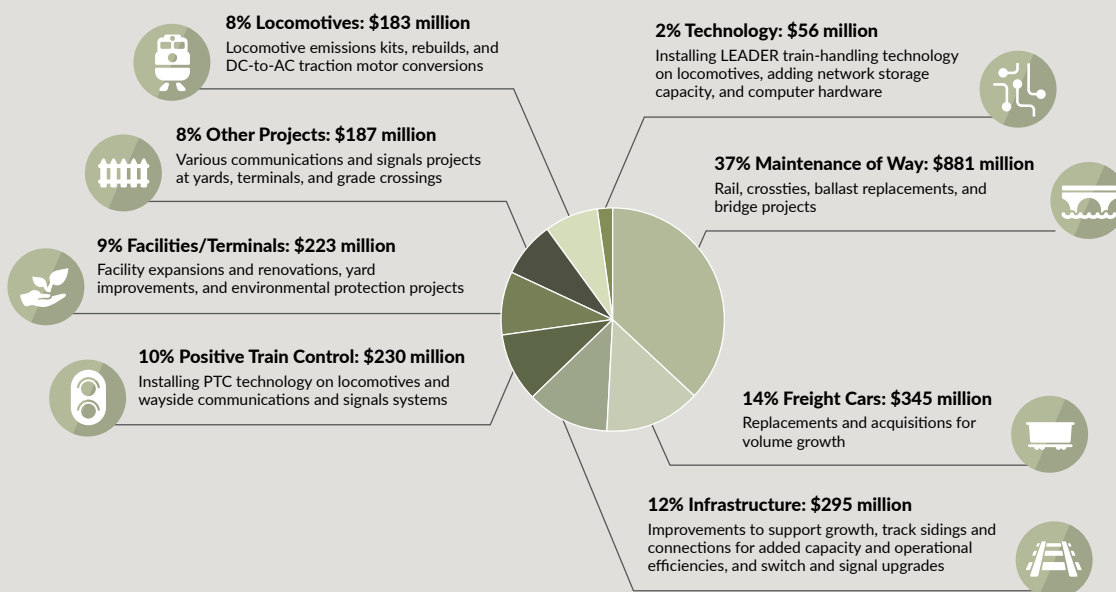
The largest portion of NS' 2015 capital budget went to maintain track infrastructure: With 35,000 miles of yard and road track, NS' business is capital-intensive. The railroad installed 523 miles of new rail, replaced 2.4 million crossties, and resurfaced 5,074 miles of track with approximately 2.6 million tons of ballast.

2020 TARGET: 17%



Percentage of annual revenue NS' five-year strategic plan targets for capital investments to deliver best-in-class service. In 2015, NS invested about 23 percent of revenue in capital projects.

2015 CAPITAL INVESTMENTS



PROSPERITY

2015 SUPPLY PURCHASES SCORECARD

PURCHASED
\$4.05 BILLION
IN SUPPLIES AND SERVICES

SUPPORTED
6,717
SUPPLIERS

INCREASED SPEND WITH
MINORITY- AND WOMEN-OWNED
BUSINESSES BY
7%

Generating supply-chain value

Norfolk Southern is a critical link in the U.S. commercial freight supply chain. Customers that rely on NS to safely and efficiently move their goods to market are a critical part of the railroad's value chain. Important to NS' business success as well are thousands of companies that supply diesel fuel, equipment, materials, and a multitude of services the railroad needs for daily operations as a transportation services company.

In 2015, NS distributed \$4.05 billion into the economy to purchase goods and services from 6,717 suppliers. Five suppliers accounted for nearly 20 percent of the total spend. Two supplied NS with diesel fuel, while the other three provided things such as locomotives and locomotive parts, freight cars and car parts, roadway track equipment, and engineering services.

NS purchased \$217 million in goods from minority- and women-owned business suppliers in 2015, a 7 percent increase over the \$203 million spent in 2014. The total includes \$157 million for women-owned businesses, \$13 million for small businesses, \$8.7 million for black-owned businesses, nearly \$7 million for Asian-owned businesses, nearly \$6 million for Hispanic-owned businesses, and \$19 million for Labor Surplus Area businesses. LSA businesses are in localities designated by the U.S. Department of Labor as areas of high unemployment, where the goal of the federal program is to strengthen the nation's economy by providing these communities with economic opportunities.



Green supply chain leader

Inbound Logistics magazine named Norfolk Southern to its 2015 75 Green Supply Chain Partners list – companies that “demonstrate green best practices in their supply chain, logistics, and transportation operations.” Editors based the selection on measurable green results, sustainability innovation, continuous improvement, and industry recognition. The magazine cited NS' Trees and Trains carbon-mitigation program and its goal to reduce greenhouse gas emissions in business operations.

PROSPERITY

2015 PHILANTHROPY SCORECARD

\$7.35 MILLION
5.3%↑ IN NS FOUNDATION
GIVING OVER 2014

466
FOUNDATION GRANTS

\$13.7 MILLION
COMBINED FOUNDATION,
CORPORATE, BUSINESS GIVING

1,218
FOUNDATION MATCHING GIFTS

Support for communities where employees live and work

The Norfolk Southern Foundation, the company's charitable giving arm, helps build stronger communities across the railroad's network. In 2015, the Foundation donated nearly \$7.4 million in grants to support community health and human service needs, education, arts and culture, and the environment.

In combined foundation, corporate, and business giving, NS distributed more than \$13.7 million to organizations, including food banks, homeless shelters, universities, early childhood education, museums, libraries, performing arts groups, local fire and police departments, economic development groups, and conservationists.

Under a matching gift program, the Foundation in 2015 provided more than \$1.7 million to nonprofits to match employee and retiree donations. In addition, the corporation distributed more than \$1 million to tax-exempt organizations designated by employees as part of the company's Good Government Fund matching contributions program. Business giving in 2015 encompassed memberships and sponsorships, including the American Coalition for Clean Coal Energy, the U.S. Chamber of Commerce, Operation Lifesaver, and the National Association of Manufacturers.



Giving to help build stronger communities

	Business & Economic Development	\$3,662,116
	Community Relations United Way Other Health & Human Services	\$3,022,085 \$1,723,450 \$1,298,635
	Culture & Arts	\$1,502,151
	Education	\$1,136,607
	Civic & Community	\$612,234
	Environment	\$326,000
	Matching Gifts (Employees and Retirees) Education (250 institutions/552 gifts) Culture & Arts (202 organizations/623 gifts) Environment (24 organizations/43 gifts)	\$1,782,612 \$1,142,844 \$616,329 \$23,439
	Good Government Fund Matching Contributions	\$1,004,279

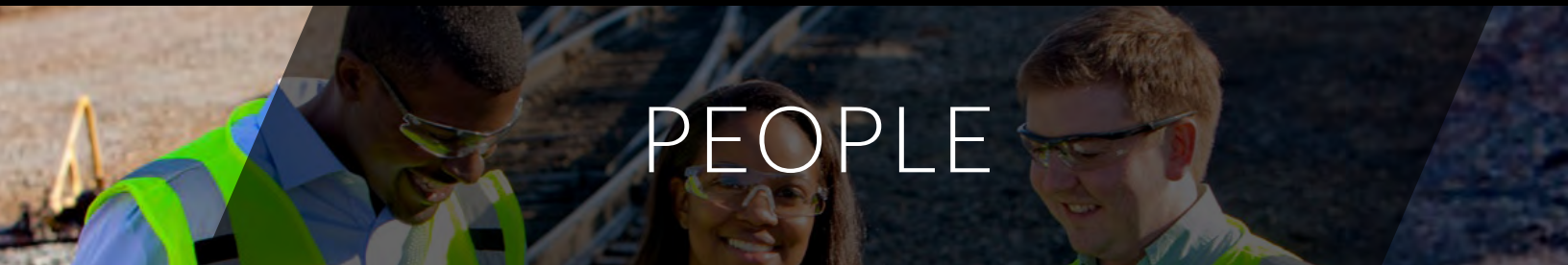


\$152+ million in giving since 1983 start

Learn more about the [Norfolk Southern Foundation](#) and how to apply for a grant on the corporate website.

PEOPLE



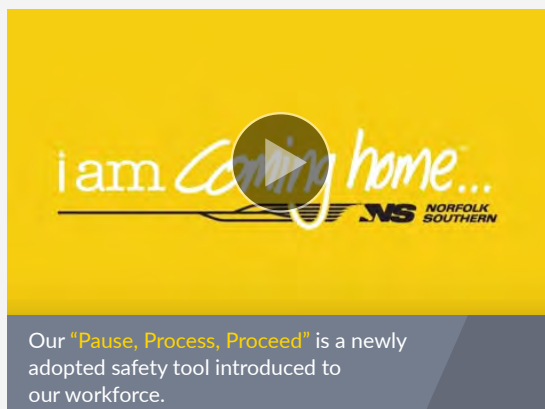


WHAT EFFICIENCY LOOKS LIKE



Making It Home Safely Each and Every Day

In 2015, NS recommitted to an injury-free workplace, adopting a more personal approach. The company introduced "i am Coming Home" as a new brand for its safety program. Highlights from this program include:



PEOPLE

2015 WORKPLACE SAFETY SCORECARD

RECORDED
13 PERCENT FEWER
REPORTABLE INJURIES

LAUNCHED
"I AM COMING HOME™"
SAFETY BRAND

INTRODUCED
"RISK FACTOR"
WORKSHOPS

Making safety personal

At Norfolk Southern offices, shops, rail yards, and field operations, the No. 1 goal every day is for each employee to go home safely.

In 2015, NS recommitted to an injury-free workplace, adopting a more personal approach. The company introduced "i am Coming Home™" as a new brand for its safety program. As part of the campaign, all operations employees received a handwritten notecard from NS' chief operating officer, with this message:

"I want you to go home to your family every day safely, and I want them to know that at NS, safety means that you are coming home. What could be more important than getting home to our families and loved ones safely every day?"

At work locations, "i am Coming Home" banners now are commonplace. Ongoing employee engagement includes videos with key safety messages and employees sharing stories about working safely. NS has incorporated the brand into its safety vision statement: "We get home safe. Every day. No job is so important and no service is so urgent that we cannot take the time to perform our work safely."



"When we're working safely and looking out for each other, we're making good business decisions. If I'm a shipper looking for a rail company to move my product, I'm going to go with the one that is the safest."

– Jerry Hall, vice president network and service management

Taking risk into account

In 2015, Norfolk Southern introduced “Risk Factor” training workshops that help operations employees recognize and safely manage risks they encounter daily.

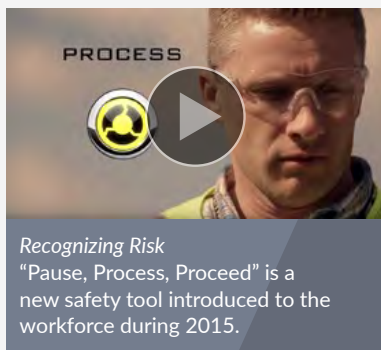
The interactive workshops – a full day for supervisors and a half day for craft employees – feature a three-step safety tool called “Pause, Process, and Proceed.” Employees pause to assess potential risks of a work task, process how to perform the task safely and effectively, and then proceed in the safest way possible.

NS and DuPont Sustainable Solutions developed the training. DuPont trained more than 270 supervisors to lead workshops for craft employees. The training complements NS’ behavior-based safety program, which emphasizes positive reinforcement and coaching to promote safe work behaviors.

“The ‘Risk Factor’ training acknowledges that creating another safety rule might not be the answer to preventing all injuries,” said Jeremy Bush, an assistant terminal superintendent who teaches the workshop to locomotive engineers and conductors. “Our train and engine crews are very open to hearing that because it’s not as authoritative. We’re actively involved in a two-way conversation about risks and how we can make good choices for our safety every day.”

“The goal is to help employees reduce injuries through a deliberate decision-making process that starts by acknowledging that risk exists,” said Mike Armstrong, a trainmaster and workshop instructor.

“Own your decisions,” Armstrong told train crews during a workshop at Crewe, Va. “What you do out here affects you, your co-workers, and your families. The public wants to know that the people operating a train through their neighborhood are doing it safely.”



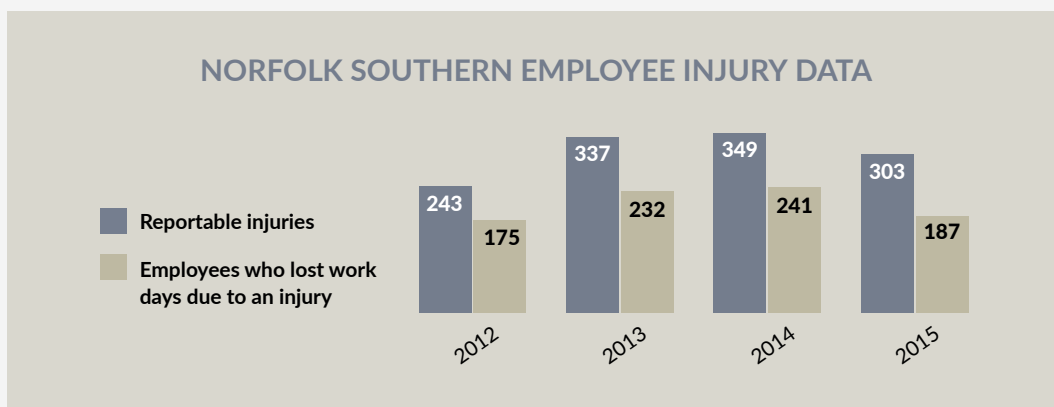
NS ergonomics: Enhancing safety, efficiency, and the bottom line

Norfolk Southern’s ergonomics program encourages employee innovation, teamwork, and problem-solving to enhance workplace safety and efficiency. Employee successes are showcased in the annual Ergo Cup competition. In 2015, the competition drew 26 entries from Mechanical Department shops and 10 from Engineering Department teams.

The winning teams made improvements to equipment and work processes that eliminated manual lifting, reduced the time required to perform tasks, and saved on operating costs. The winning engineering team, for example, designed a rail stabilizer carrier now being used by bridge maintenance crews systemwide. In addition to ergonomic benefits, the carrier boosts the company’s bottom line by reducing track downtime during bridge maintenance.

“We try to get a domino effect with the Ergo Cup entries,” said Don Robinson, manager safety and workplace design. “We go from one good idea in one location to a tool or work process improvement that benefits hundreds of employees across the railroad.”





WORKPLACE INJURIES DECLINE IN 2015

Down: 13 percent

Norfolk Southern's "i am Coming Home" safety campaign in 2015 coincided with a 13 percent decline in reportable injuries. In addition to fewer injuries, the number of employees who missed at least one day of work due to an injury decreased by 22 percent.

The company's injury ratio for 2015 was 1.05 injuries per every 200,000 employee-hours of service. That compares with 1.21 injuries in 2014 and 1.17 injuries in 2013.

TOP 5 INJURIES IN 2015

Five types of injuries accounted for 80 percent of employee reportable injuries.

Strain	107
Bruise/Contusion	40
Fracture	37
Laceration/Cut	33
Sprain	25

Tragically, Norfolk Southern experienced one work-related employee fatality during the year. A 20-year-old conductor trainee coupling rail cars at a customer facility in Mississippi died after being struck by moving equipment on the track.

Keeping safe in the field

Around 80 percent of employees work in transportation, mechanical, and engineering, the railroad's three main operating departments. These groups operate 24/7 in conditions that include large moving equipment, ballasted walking surfaces, and inclement weather.

NS' safety program trains employees to recognize on-the-job risks and to perform tasks in accordance with workplace safety rules and practices that emphasize situational awareness to guard against injuries or incidents.

In 2015, mechanical employees, including those who repair and maintain locomotives and rail cars, achieved the best safety performance, reporting 0.66 injuries per 200,000 employee-hours of service. Transportation employees, who include locomotive engineers and conductors, had the most improved safety record, reducing their injury ratio by more than 30 percent. Engineering employees, including those who maintain track, bridges, and signals, experienced a slight uptick in reportable injuries.

Telematics technology drives safety home – and saves fuel

Norfolk Southern owns and maintains a fleet of around 6,000 light-, medium-, and heavy-duty trucks, SUVs, and cars that employees use in field operations. That number ranks NS as a Top 100 commercial fleet. To enhance workplace safety, improve use, and reduce maintenance costs, the company is using telematics technology to monitor driving behaviors.

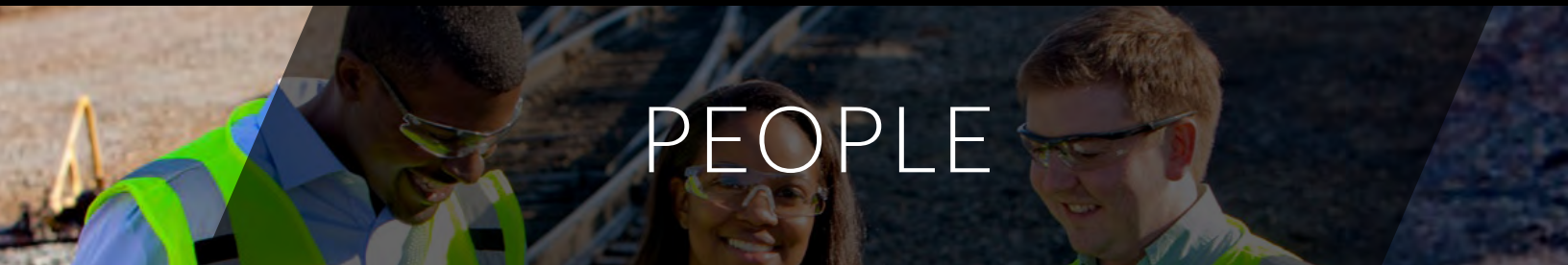
A 2015 pilot program equipped 100 vehicles with the technology, which uses GPS and mobile cellular to track instances of hard braking, hard acceleration, speeding above the posted limit, and excessive speeding. Employees were issued scorecards, and performance improved across all metrics. In 2016, NS plans to outfit an additional 2,600 vehicles with telematics.

“We’re constantly working to enhance safety at Norfolk Southern, and this is another tool we’re putting in the toolbox,” said Mike Waits, system manager vehicle fleet administration. “The more cautious and conscientious you are driving at work, the more that cascades to safer driving when it’s your spouse or children in the vehicle with you.”



In addition to safety, NS is using the technology to reduce unnecessary vehicle idling, which will contribute to the company’s fuel- and emissions-reduction goals. During the pilot, employees achieved a 4 percent improvement overall in fuel economy. In 2015, NS’ vehicle fleet consumed more than 12 million gallons of fuel at a cost of nearly \$31 million – trimming 4 percent off the bill would save more than \$1 million.

“When you’re talking about spending millions of dollars on fuel, even small reductions make an impact,” Waits said. “In a sustainability sense, it’s not just reduced consumption, but reduced emissions, too.”



PEOPLE

2015 DIVERSITY SCORECARD

HIRED RECORD NUMBER OF
WOMEN

FORMED
**LOCAL DIVERSITY AND
INCLUSION COUNCILS**

NAMED
TOP 100
MILITARY FRIENDLY EMPLOYER

HIRED
509 MILITARY VETERANS –
15% OF TOTAL HIRES

NAMED
TOP 50 EMPLOYER
BY READERS OF CAREERS & THE DISABLED MAGAZINE

To learn more about diversity and inclusion at Norfolk Southern visit the [corporate website](#).



NS takes grass-roots approach to diversity and inclusion

Norfolk Southern recognizes the business benefits of a workplace where differing viewpoints, ideas, and experiences are valued and shared. In 2015, NS expanded efforts to promote a more diverse and inclusive company, establishing employee Diversity and Inclusion Councils in each of the railroad's 10 operating divisions.

The purpose of these grass-roots councils is to promote a respectful workplace, contribute to business goals, and maximize employee potential. By year's end, more than 200 employees were serving on the councils.

"Diversity influences Norfolk Southern's performance," said Tom Winter, manager diversity. "Diversity with inclusiveness enables us to produce better results while attracting and retaining the best employees."



New employee resource group

As another way to foster workplace diversity and inclusion, Norfolk Southern employees in 2015 formed the J. Whitaker Employee Resource Group. The group is named for the late John W. Whitaker, the first African American locomotive engineer on the Central of Georgia Railway and the first African American transportation officer on Southern Railway. Through mergers and acquisitions, both railroads are part of NS' network.

Open to all employees, the J. Whitaker group aims to help NS attract, retain, and develop minority employees through mentoring and networking. The group joins other NS employee resource groups that are making a difference in the workplace and in communities the railroad serves. Formed and led by employees, these ERGs include groups with a focus on employees who are women, young professionals, veterans, and long-time railroaders.

More women joining operations workforce

In 2015, Norfolk Southern hired record numbers of female conductor trainees and management trainees. More than 28 percent of management trainees hired during the year – 48 out of 169 – were women, while more than 7 percent of conductor trainees – 154 out of 2,102 – were female.

"We're better as a company when we have women involved in our operations because of the diversity of views and experience," said Mike Wheeler, chief operating officer. "A gender-diverse workforce brings good ideas and viewpoints to the table, which leads to better results."

At NS' fifth annual "Women in Field Operations" conference in April 2016, 90 female field supervisors from across the company had a chance to network and talk with senior executives, including CEO Jim Squires, Wheeler, and operations department vice presidents. Attendees included management trainees, yardmasters and trainmasters, mechanical and track supervisors, and chief dispatchers.



Over the two-day session, company executives discussed how these female workplace leaders can positively impact safety, service, and stewardship at NS. Other topics included career development and women in leadership.

"We were fortunate to have this opportunity. This was clearly important to Norfolk Southern, and it was very effective for the women there. Women do feel supported," said Cassandra Mullee, an eight-year employee who joined as a management trainee. She has advanced to assistant superintendent of Shire Oaks Yard in Pennsylvania, where she oversees trainmasters and around 250 train and engine employees.

Overall, females comprise 5 percent of NS' unionized workforce and 20 percent of management employees. "NS is making progress to grow those numbers," said Annie Adams, vice president human resources.

"Being able to compete for the best talent is critical to Norfolk Southern's success," Adams said. "Events like the Women in Field Operations session demonstrate the commitment of the operations departments' vice presidents to retaining and developing women as leaders in field operations."

In Atlanta, a taste of India

Since 2011, employees in Norfolk Southern's Atlanta Midtown office building have celebrated Diwali, courtesy of Indian colleagues who share the culture, clothing, and foods of India. About 80 employees and contractors of Indian heritage contributed to the 2015 celebration.

The celebration underscores the goals of the grassroots diversity and inclusion councils that NS established in its operating divisions in 2015.

"The whole idea is to give everybody else insight into our culture and to make everyone realize that we can come from all over the world, but basically we're all the same," said Rajshree Doshi, technology analyst.



Many employees wore traditional Indian clothing, including such non-Indians as Fred Ehlers, vice president IT. Ehlers, attending his second Diwali event, said the Atlanta celebration is special because it is an employee initiative.

"This is the best kind of diversity event because it happened on its own without prompting from the company," Ehlers said. "It grew organically from a group of folks who share their culture and their heritage with the rest of us. It's a great time to meet and interact with your co-workers."

RECOGNITION



Veteran friendly

Military Friendly®, a division of Victory Media, named Norfolk Southern to its 2016 Top 100 Military Friendly employers. The rankings are based on an annual survey that assesses a company's long-term commitment to recruit, hire, and retain former military personnel; policies for Reserve/Guard members called to active duty; and the presence of military recruitment and support programs.



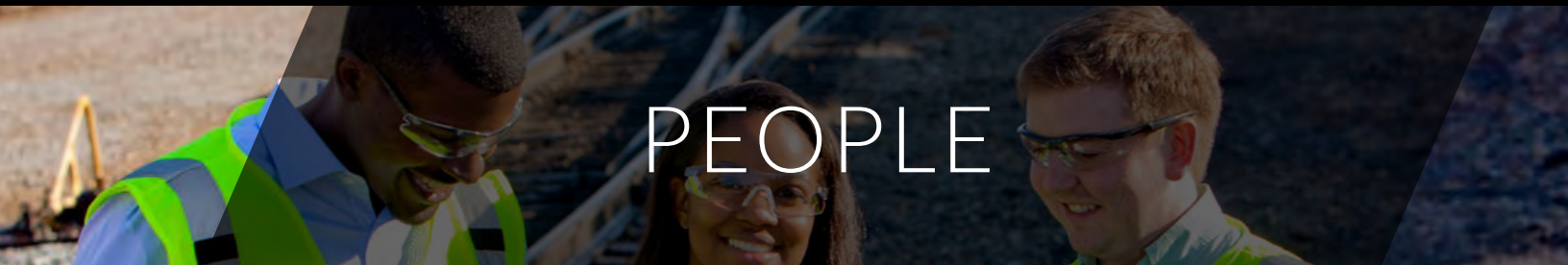
Veteran hires

In 2015, Norfolk Southern hired 509 military veterans – 15 percent of total hires during the year.



Positive environment

Norfolk Southern was the only railroad named a 2016 Top 50 Employer by readers of Careers & the Disabled Magazine. Readers were asked to name companies they'd most like to work for or that they believe provide a positive working environment for people with disabilities.



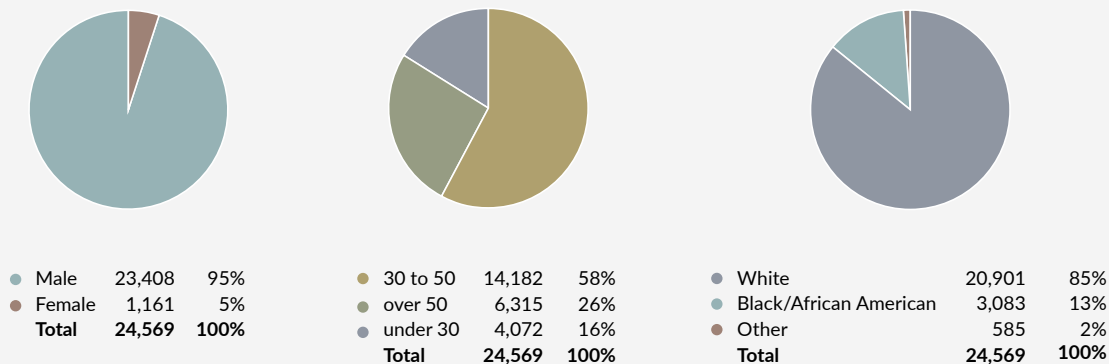
PEOPLE

NORFOLK SOUTHERN WORKFORCE SNAPSHOT

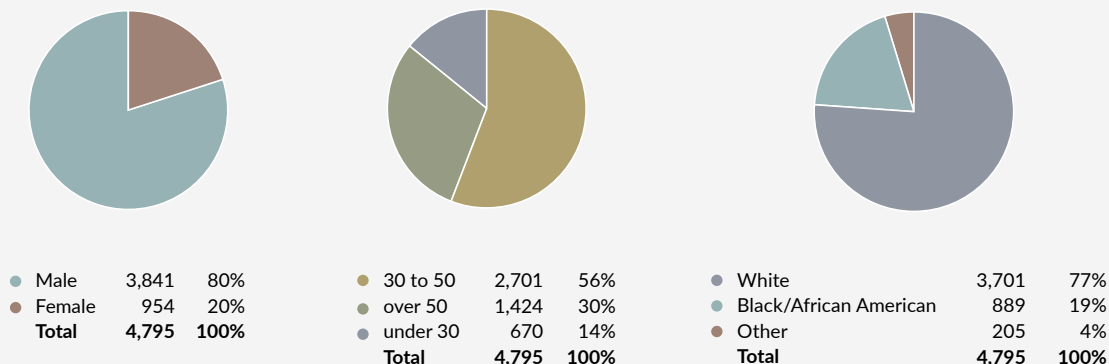
At the end of 2015, nearly 84 percent of Norfolk Southern employees were covered by collective bargaining agreements, represented by a total of 13 trade unions. These unionized craft employees include locomotive engineers and conductors; locomotive machinists, pipefitters, boilermakers, and electricians; freight car repairers; track workers; dispatchers; and communications and signals electronic specialists and maintainers.

In 2015, NS reached a new five-year collective bargaining agreement with the Brotherhood of Locomotive Engineers and Trainmen that covers approximately 4,600 locomotive engineers. The agreement continues to link engineer compensation to corporate performance through 2019 and, for the first time, provides individual incentive opportunities based on personal performance. The agreement includes changes to improve engineer work scheduling, helping ensure a more stable and available workforce while providing employees with more predictable schedules.

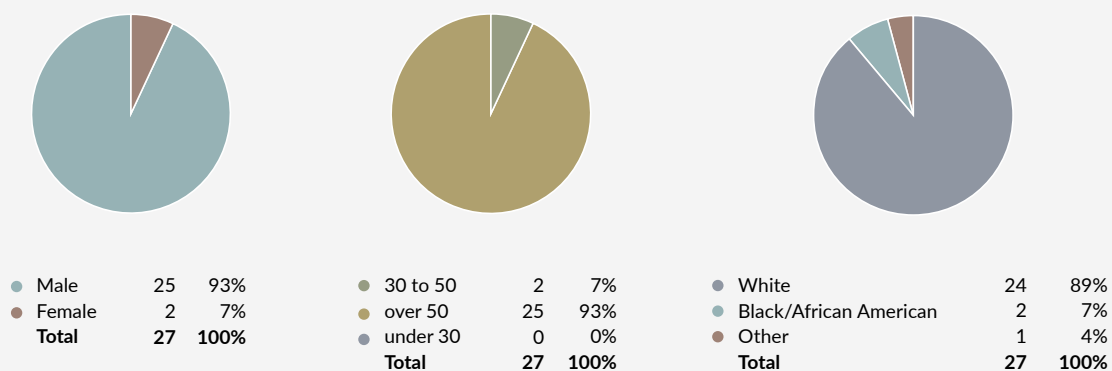
Unionized Employees as of 12/31/15



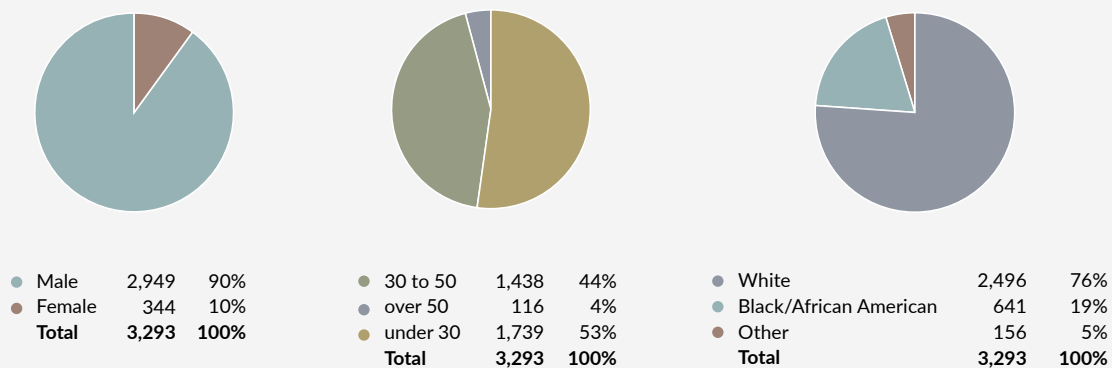
Nonunion Employees as of 12/31/15



Senior Management as of 12/31/15



2015 New Hires



2015 Employee Turnover by Working Group

Union employees	Nonunion employees	Total
2,036	575	2,611

PEOPLE

2015 EMPLOYEE-TRAINING SCORECARD

COMPLETED
EXPANSION
OF TRAINING CENTER

LAUNCHED NEW
ONLINE LEARNING
MANAGEMENT SYSTEM

BEGAN UPDATE OF
CONDUCTOR TRAINEE
PROGRAM



Advances in employee development

In 2015, the company advanced efforts to enhance training and career development opportunities for new hires and seasoned employees.

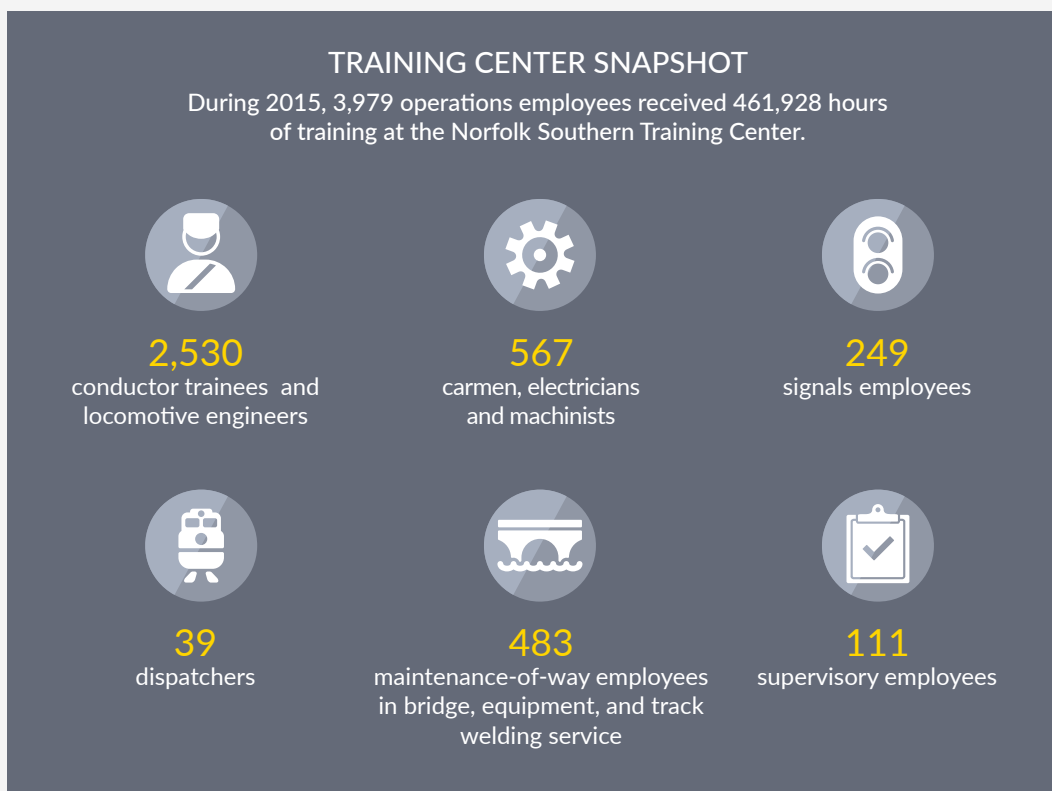
Following are the most significant accomplishments.

Norfolk Southern Training Center:

Located in McDonough, Ga., the facility provides centralized technical training for newly hired craft employees and advanced training programs for veteran and supervisory employees. In March, NS completed a new classroom addition that doubled instructional space to 50,000 square feet and equipped the facility with the latest in digital learning technologies, including touchscreens, smart boards, tablets, and customized computer simulations.

The upgrade also enhanced environmental sustainability:

The center's new virtual welding lab, for example, enables NS to teach the basics of freight car welding virtually instead of consuming stacks of metal burn plates. The computer-simulated welder training provides physical, auditory, and visual feedback and actually accelerates training.



NS also began introducing enhancements to its conductor trainee program. Improvements in 2015 included the addition of static “competency stations” that expand hands-on training in such work tasks as mounting and dismounting equipment, securing rail car hand brakes, and coupling air hoses. The aim is to make the training program more efficient and reduce the amount of time needed to qualify conductors. This addresses a business need to improve resource allocation in response to changing business markets and traffic volumes.

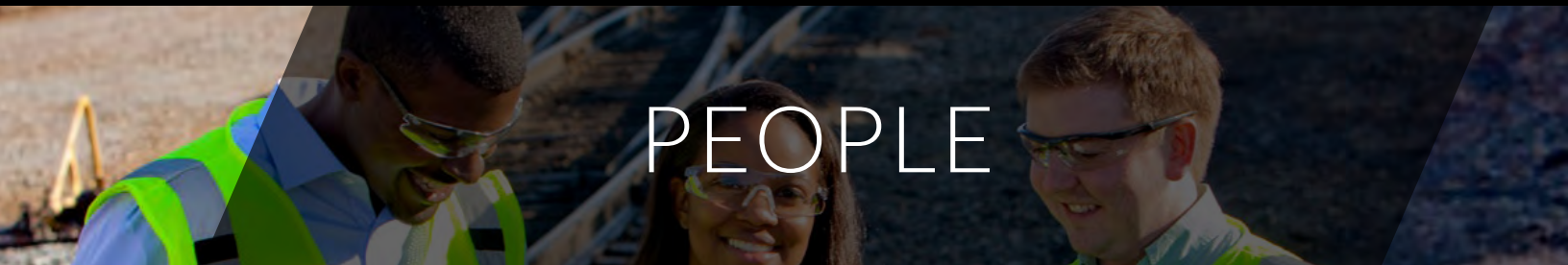
Learning Management System:

NS launched a new online learning management system that makes it easier than ever for employees to access training and develop and advance their careers.

The new LMS consolidates training programs formerly housed on separate systems into a one-stop shopping place that allows employees to browse training topics, complete online courses, and track their learning. In addition, employees receive automatic email notification of required training based on job position, department, and other criteria recommended for various job roles to help employees be successful.

“The LMS is a best-in-class system,” said Dan MacKay, director employee development. “It gives the company much more capability to deliver and track training and it gives employees a much more efficient way to explore and take advantage of the training opportunities we offer.

“Implementing the LMS as the single corporate standard,” MacKay said, “reduces the company’s operational costs in addition to streamlining the training process for employees.”



PEOPLE

2015 WELLNS SCORECARD

20% INCREASE
IN EMPLOYEE PARTICIPATION IN
HEALTHMILES PROGRAM

29 POWERTRAIN
ACTIVITY EVENTS TO
SUPPORT COMMUNITIES

'HEALTHZONE' STATIONS
AT MORE THAN
50 WORK LOCATIONS

Supporting employee health and wellness

Norfolk Southern's voluntary WellNS program helps employees maintain healthy lifestyles. Employees and their spouses can join fitness centers, sign up for Weight Watchers, and design home workouts with a virtual trainer – to name a few benefits. A WellNS website offers information on topics such as getting fit, managing stress, and quitting smoking.

Virgin Pulse HealthMiles

More than 8,700 employees – about 30 percent of NS' workforce – earned points and pocketed up to \$260 a year by walking, participating in challenges, and tracking their health through this WellNS program. Employees at more than 50 work locations across NS can monitor their weight, blood pressure, and body mass index at "HealthZone" stations.



Employees took more than
19 BILLION STEPS

=

497 trips over NS'
20,000 miles of rail



Nearly **60%** averaged more than **7,000** steps daily, meeting the Centers for Disease Control and Prevention's recommendations for activity.

Participation increased by more than **20%** over 2014.

PowerTrain

Teams of 10 or more employees compete in activity events to benefit nonprofit organizations, with a \$1,000 donation through WellNS. More than 500 employees participated in 29 PowerTrain events, including forming a systemwide national team for the Alzheimer's Foundation Walk.

Fitness Classes

NS offered on-site classes in Pilates, Zumba, yoga, and core strengthening at five locations, including Norfolk headquarters, Atlanta, and the company's training center in McDonough, Ga. New FitNS Centers were constructed in Roanoke, Norfolk, and Atlanta.

WELLNS RECOGNITIONS IN 2015



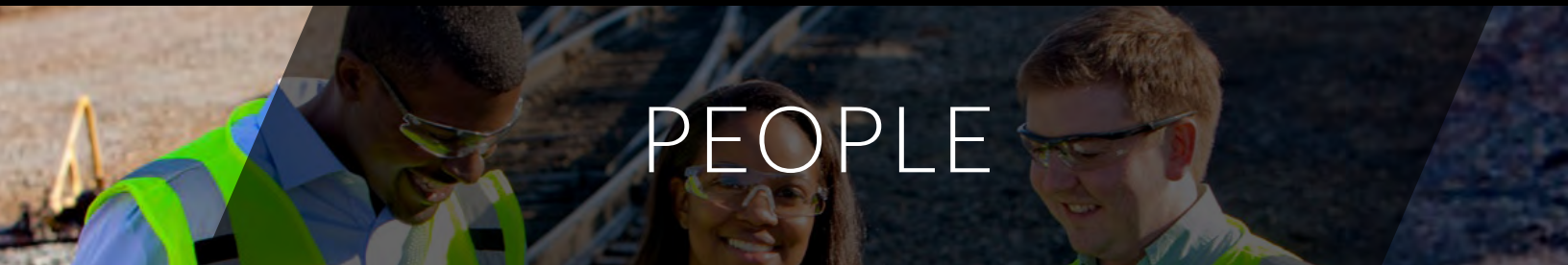
The American Heart Association named NS a Platinum Fit-Friendly Worksite for going above and beyond to promote and improve workplace health culture for employees.



The Atlanta Business Chronicle ranked NS in the top five of large Atlanta companies in its 2015 Healthiest Employers program, citing the railroad's WellNS program and partnership with Virgin Pulse to encourage employees to get active and lead healthy lifestyles.



The American Diabetes Association designated NS as a Corporate Elite Health Champion, which recognizes companies that make health and wellness a priority for employees in three areas: nutrition and weight management, physical activity, and organizational well-being.



PEOPLE

2015 THOROUGHbred VOLUNTEERS SCORECARD

VOLUNTEERED 2,500
COMMUNITY-SERVICE HOURS

COLLECTED ENOUGH FOOD AND CASH FOR
11,000 MEALS

GIVING BACK TO COMMUNITIES

The Thoroughbred Volunteers, Norfolk Southern's formal volunteer program, is all about employees giving back and being a part of the communities where they live and work. In 2015, Thoroughbred Volunteers played active roles in Norfolk; Atlanta; Harrisburg, Pa.; and Greenville, S.C.

These volunteers recorded 2,500 volunteer hours during chapter-sponsored events. Those hours do not include the time NS employees invested volunteering on their own for schools, churches, civic clubs, and other community organizations across 22 states.

In Altoona, Pa., for example, employees on the Juniata Locomotive Shop safety and service committee held fundraising drives for the local Toys for Tots and three area food banks.

"We look at volunteering as part of social performance. It strengthens our ties with local communities."

—Marjorie Heard, chair,
Atlanta Thoroughbred Volunteers



WAYS WE GIVE BACK



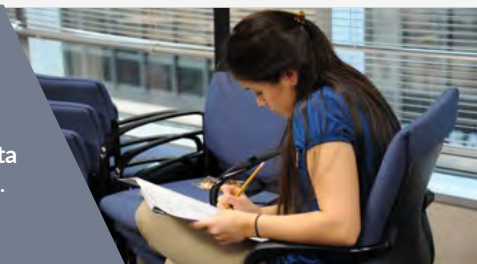
Packed **90 boxes of medical supplies** for countries in need for MedShare medical relief.

Assisted food banks in Georgia, Virginia, South Carolina, and Pennsylvania, sorting more than **800 pounds of food** for the Atlanta Food Bank and collecting more than **1,000 cans of food** and **\$1,600 in donations** for southeastern Virginia food banks. The efforts provided **11,000 meals** for residents in need.



Cleaned nature trails and **planted trees** for Hands On Atlanta Day.

Offered a workshop on resume writing and interviewing and held a business-clothing drive in partnership with the **Urban League of Greater Atlanta** and **Toastmasters** to help **15 citizens get job-ready**.



Removed more than **1,300 pounds of debris** from the Chesapeake Bay watershed near downtown Norfolk on Clean the Bay Day.

Assembled **Back-to-School backpacks** for children in Harrisburg, Pa., area schools through **Volunteers for America**.



EMPLOYEE SPOTLIGHT

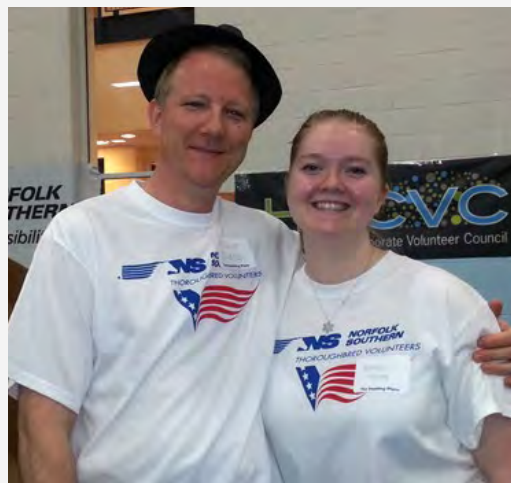
Stephen Young: Building a tradition of volunteering

Before joining Norfolk Southern in 1999, Stephen Young had never been involved in community volunteer work. Now, Young, manager intermodal equipment, is a fixture with the Norfolk Thoroughbred Volunteers. He has twice earned Volunteer of the Year award for most volunteer hours and has chaired the group for the past year.

A favorite project of his is the annual Hampton Roads Family VOLUNTEER Day, a half-day food-packing event to assist local charities. Young and his daughter, Amber, have made it a family tradition, participating together for the past 15 years – since Amber, now in college, was five years old.

For the 2015 event, Norfolk Southern employees who work in the 21-story headquarters building collected canned foods by floors as part of a competition Young helped organize. Over Thanksgiving weekend, the father-daughter team joined more than 1,000 local volunteers to pack nonperishable food items for 14 nonprofits ranging from homeless shelters to food banks.

Initially, Young said his motive for getting Amber involved was to help her develop a history of volunteer work for college applications and job resumes. Now, both are hooked on volunteering for its own sake.

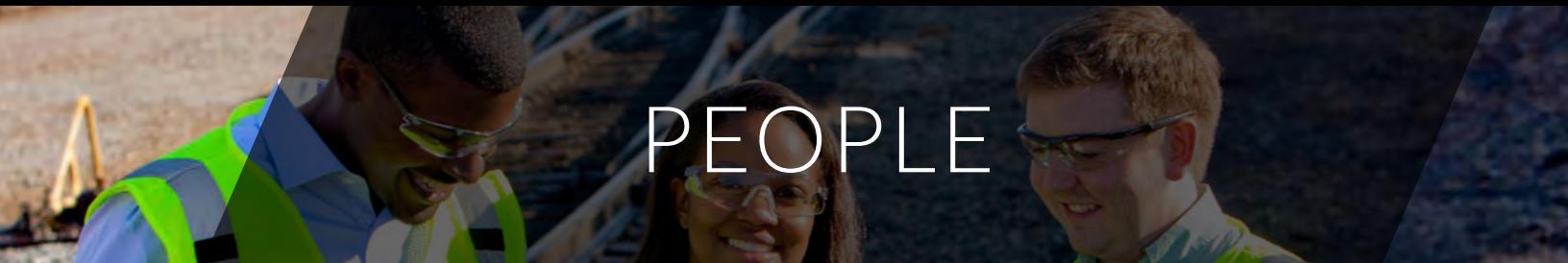


"We caught the spirit," he said. "We love experiencing the benefit of seeing joy on people's faces."

Young hopes to make Family VOLUNTEER Day a multigenerational tradition. "The company introduced me to it, I introduced my daughter to it, and I'd like to introduce my grandchildren one day," he said. "We feel good when we volunteer, and we know we're lucky to be in a position to be able to do it."

**"I think it's important for us all to give back and show
our support for the initiatives our communities have."**

**–Porshia Cross, chair,
Piedmont Thoroughbred Volunteers**



PEOPLE

2015 COMMUNITY SAFETY SCORECARD

PERCENTAGE OF HAZMAT SAFE DELIVERIES

99.9999935%

MOVED: **612,950** HAZMAT CARLOADS

ACCIDENT RELEASES: **4 CARS**

REPORTABLE HAZMAT INCIDENTS:
DROPPED 23 PERCENT

COMMUNITY SAFETY

Norfolk Southern's long-term business success depends on safe railroad operations. NS actively engages customers, communities, and other key stakeholders in an effort to continually improve performance in this vital area of corporate sustainability.

"The most important obligation we have to the communities in which we operate is to do so safely. Ensuring that our employees, customers, and neighbors return home safely every day is good business."

– CEO Jim Squires, at NS' 2016 annual meeting

View Squires' [full remarks on the corporate website](#).

SAFELY MOVING GOODS

In 2015, Norfolk Southern continued to demonstrate that rail is a safe and efficient mode to move federally regulated hazardous materials to market. NS' reportable incidents – nonaccident and accident releases combined – declined by nearly 23 percent from the previous year. That drop came even as the volume of hazmat carloads moved by NS increased by 4 percent.

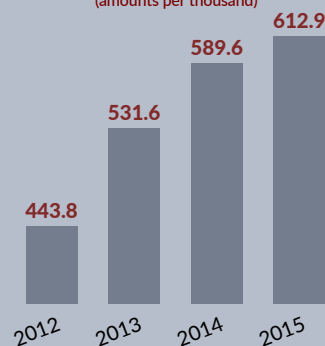
Partnering with chemical customers

Norfolk Southern recognizes chemical customers that safely ship hazardous product on NS' rail network.

In 2015, NS presented 60 customers with its Thoroughbred Chemical Safety Award for shipping 224,660 carloads of hazardous material without incident. These chemicals included crude petroleum, ethanol, fertilizers, and chemicals used to manufacture common household products – all vital to the U.S. economy, but potentially dangerous if mishandled or leaked. As a common carrier, NS, like other U.S. railroads, is required by federal law to offer transport of these materials.

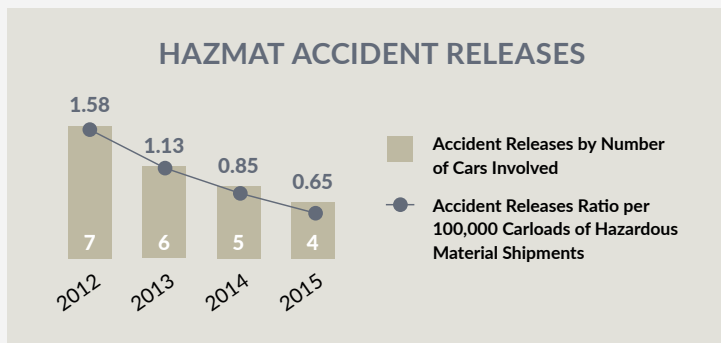
NS has presented the safety award since 1999 to customers who ship at least 1,000 tank carloads of hazardous material during a calendar year without incident. To ensure safe transport, NS adheres to comprehensive federal rules covering hazmat transport and has adopted many voluntary safeguards that exceed government regulations. In addition, NS works closely with chemical customers, including providing on-site training in safe rail-shipping practices.

CARLOADS OF REGULATED HAZARDOUS MATERIALS TRANSPORTED
(amounts per thousand)



Accidents involving releases

Across NS' 22-state system, four rail cars involved in three separate accidents released hazardous material during the year. No injuries or long-term environmental impacts occurred. In each case, NS environmental management employees, in partnership with regulatory authorities and licensed contractors, ensured that the spill sites were secured, cleaned, and remediated.

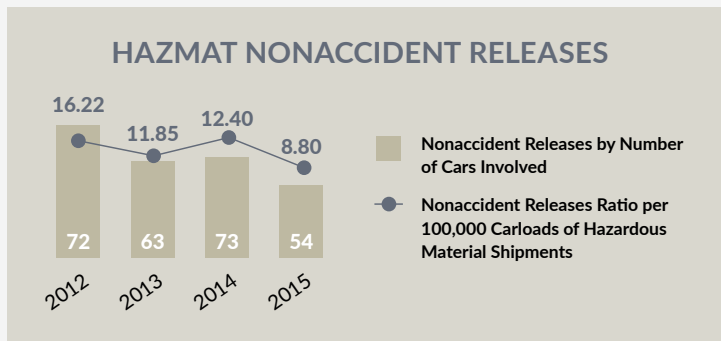


Following is a snapshot of the accident releases:

- In April, a train operating near **Trenton, S.C.**, derailed after striking a downed tree on the tracks, causing the release of approximately 61,000 pounds of ammonium nitrate from two covered hopper cars. Ammonium nitrate is an important component of many fertilizer mixtures.
- In July, a tank car leaked about 600 gallons of sodium hydroxide solution after being struck by another tank car as it rolled off of the "hump" track at NS' Norris Yard in **Birmingham, Ala.** The incident was linked to a power failure. Many industries use sodium hydroxide, including in the manufacture of pulp and paper, textiles, drinking water, soaps and detergent, and drain cleaners.
- In November, a container loaded on a flatcar spilled 8,000 pounds of soil containing polychlorinated biphenyls after the car derailed on an NS switching spur track in **Nutley, N.J.**, An NS train was moving the contaminated soil for a customer involved in a remediation cleanup at a former pharmaceutical plant.

Nonaccident releases

During the year, 54 rail cars being moved by NS leaked small amounts of hazardous materials as the result of nonaccident releases. As defined by the industry, a nonaccident release is the unintentional release of hazmat while in transportation — including loading and unloading while in railroad possession — that is not caused by a derailment, collision, or other rail-related accident.



Most nonaccident releases involve things such as loose tank car gaskets, valves, and caps. Tank cars used in revenue service to move hazardous materials on Norfolk Southern are owned by customers, who are responsible for maintaining them.



Safe Tracks, Safe Towns: In 2015, NS invested nearly \$900 million to maintain its tracks, with more than 5,500 employees systemwide dedicated to keeping the rail in top working condition.

A responsible rail carrier

Norfolk Southern has participated in the American Chemistry Council's Responsible Care® Partnership Program since 1996. In 2015, NS earned another three-year recertification for meeting the program's strict membership standards. That includes demonstration of a culture across all levels of the company to continually identify, reduce, and manage process-safety risks.

NS' participation in this voluntary program reflects the company's commitment to work across business sectors to continually improve performance in environmental, health, safety, and security programs involving transport of chemicals.

PARTNERING WITH COMMUNITIES

A central focus of Norfolk Southern's public safety efforts is participation in the voluntary Transportation Community Awareness and Emergency Response, or TRANSCAER program. In 2015, employees in NS' Safety and Environmental Department provided training through TRANSCAER for 4,792 emergency responders, government officials, members of the media, and others in 18 states to help their communities better prepare for potential hazmat incidents.

The training included classroom seminars, hands-on sessions with rolling tank cars, table-top simulations, full-scale drills, and exercises at training centers operated by NS and the Association of American Railroads. In addition, NS was instrumental in developing the new AskRail™ mobile app, which provides real-time rail information to first responders.

A highlight was operation of DuPont training tank cars in a partnership with the chemical company. The tank cars stopped in 25 cities for three days each to train emergency responders.



NS grants equip responders

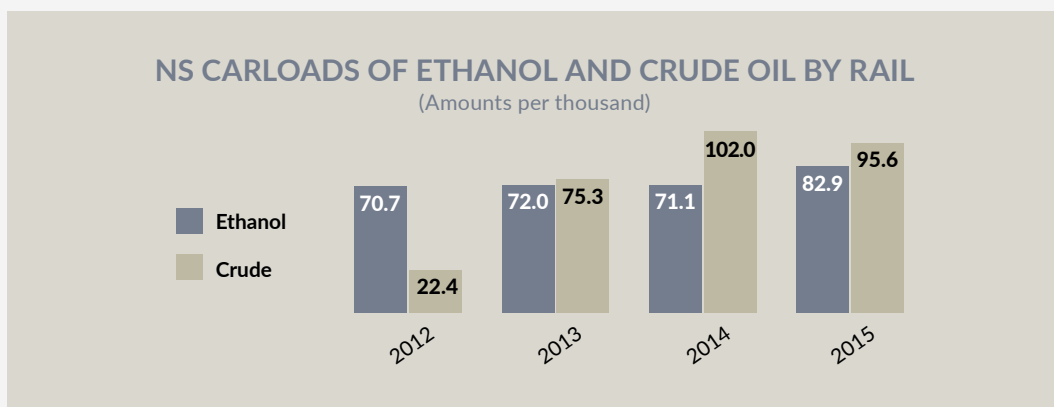
In 2015, the Norfolk Southern Foundation, which oversees NS' charitable giving, provided grants totaling \$190,750 to help fire, police, and emergency responders purchase safety equipment for their departments. Ranging from \$1,000 to \$10,000, the grants were awarded to first responders in all 10 of the railroad's operating divisions.

RECOGNITION



TRANSCAER achievement award

In 2015, Norfolk Southern earned a National TRANSCAER Achievement Award for the 16th time and 14th consecutive year. The award recognizes exceptional achievement in support of efforts to help communities prepare for and safely respond to potential incidents involving transport of hazardous materials.



Crude-by-rail training continues in 2015

In 2015, Norfolk Southern sponsored training for 80 emergency responders at a three-day crude-by-rail safety course at the Association of American Railroads' Security and Emergency Response Training Center in Pueblo, Colo. In addition, NS sponsored training for 10 emergency responders attending the railroad's course on tank car emergency response.

Including 2014, NS has invested around \$800,000 in training nearly 220 first responders to safely respond to potential incidents involving crude oil transport. NS sponsored emergency responders from communities where crude oil trains operate, including responders from Indiana, Ohio, Pennsylvania, Illinois, New Jersey, Maryland, and Delaware.

NS safety train reflects commitment to communities

In 2015, Norfolk Southern launched its Operation Awareness & Response program to cultivate and strengthen relationships with local first responders – and to educate the public about the economic benefits of moving hazardous materials by rail. The program provides classroom, online, and field training on hazardous materials transport and useful information about rail operations.

In April 2016, NS rolled out the program's centerpiece: a hazmat safety train. The company also launched a new website, <http://www.joinNSOAR.com/>.

The safety train includes a locomotive painted in honor of emergency responders with insignia recognizing police, fire, and emergency services; two boxcars converted into classrooms; and four styles of tank cars.



New 9-1-1 locomotive honors first responders

In June 2015, Norfolk Southern commissioned the NS 9-1-1 locomotive in the nation's capital to honor emergency first responders. The unit features the Maltese Cross of fire services, the Emergency Medical Services' "Star of Life," and the police shield. It also features the logo for TRANSCAER.

Reaching people where they live

"Brainy" and "Whistle Stop" trips promote community rail safety

Norfolk Southern trains run through thousands of communities in the eastern U.S., delivering goods that support local economies and residents. To promote safe rail operations, NS invests in community awareness programs that target two troublesome areas: trespassing on railroad tracks and unsafe motorist behavior at highway-rail grade crossings.



A survivor tells his story

On Norfolk Southern's 2015 Whistle Stop tours, Mark Kalina Jr. shared his story about the night he took a short-cut through another railroad's yard in Ohio. A train severed his legs after he tripped and fell.

NS' two largest outreach efforts in 2015 were its "Whistle Stop" train trips and the "Train Your Brain" campaign, featuring Brainy, the railroad's pink safety ambassador. The railroad's Safety and Environmental Department partnered with Operation Lifesaver, a national nonprofit safety organization, on the Whistle Stop tours.

Whistle Stop: NS operated two of these three-day train trips, with the theme, "See Tracks? Think Train!" One stopped in seven cities in South Carolina and North Carolina; the other stopped in six Ohio cities. The trains gave rides to key stakeholders, including state lawmakers; police, fire, and emergency medical responders; civic leaders; and city and county council members. NS and Operation Lifesaver representatives used the outings as an opportunity to build relationships and discuss safety messages the guest passengers could take into their communities.

Train Your Brain: This campaign targeted 11 communities in south-central Georgia along a corridor from Macon to Valdosta. In 2014, NS trains were involved in 45 collisions at grade crossings in Georgia that resulted in six deaths and 20 injuries.

Outreach included distributing branded homework folders and rail safety activity sheets to 71 elementary schools and handing out branded driver's education kits to 18 high schools. Brainy appeared at high school football games, festivals, and other community events. NS added a page to its www.BrainysWorld.com website that allows users to make a "Railroad Smart Pledge" commitment to loved ones.

To complement the new "I am Coming Home" safety message for employees, NS launched a "Cross carefully, get home safely" campaign featuring roadside billboards, gasoline pump "toppers," and ads in movie theater lobbies, among other advertising.



See tracks? Think trains! Highway-rail incidents

In 2015, highway-rail grade crossing incidents involving Norfolk Southern trains declined by 12 percent. These incidents involve motorists and passing trains, most often occurring when motorists ignore flashing warning lights at railroad crossings or drive around crossing gates. Two-thirds of the incidents occurred in six of NS' 22 operating states: Indiana (with the most, at 54), Georgia, Ohio, Alabama, Pennsylvania, and North Carolina.

	2011	2012	2013	2014	2015
# of highway-rail incidents	365	336	344	373	328
# of train miles (millions)	83	87	95	96	96.4
Incidents per million train miles	4.4	3.9	3.6	3.9	3.4

Walking on tracks is trespassing: Trespasser incidents

While trespasser injuries on Norfolk Southern property declined 9 percent overall in 2015, the number of fatalities involving trespassers increased 21 percent. Much of NS' public outreach around rail safety is to make people aware that the company's train tracks are private property and that walking on them is dangerous and illegal.

	2011	2012	2013	2014	2015
Total Trespasser Injuries	123	145	180	148	134
Total Trespasser Fatalities	62	82	99	84	102

Actively engaging communities

Employees across Norfolk Southern's system play a role in educating the public about safety around trains and railroad tracks. For example, in Alabama, members of a local safety and service committee sponsored a family day cookout for the Collinsville community in a park near NS tracks. The committee's chairman, who volunteers for Operation Lifesaver, taught a class of elementary school students about railroad safety.

"We pass through these communities every day, and you want to make it the best you possibly can for them," said Jeremy Pate, a locomotive engineer based in Birmingham. "You don't want to take anything away from them. You want to bring something to the table if you can."



PLANET





Stewardship of resources is central to Norfolk Southern's business strategy. NS' commitment to sustainable operating practices reduces costs and environmental impacts. The company's efforts to improve fuel and energy efficiency, for example, are linked to lowering locomotive diesel and electricity costs and reducing carbon emissions.

With tracks that connect businesses, communities, and people across 22 states, Norfolk Southern has strong ties to the land. NS is committed to reducing and mitigating its impacts on the planet in an approach that connects conservation and capitalism, from support of reforestation in the Mississippi Delta to the preservation of rare longleaf pine habitat and wetlands in the southeastern U.S.

ENVIRONMENTAL IMPACT OF NS' GREENTREES PARTNERSHIP

OVER 15 YEARS



10,000

Acres of forest



6,040,000

Trees planted



1,120,000

Metric tons of CO₂ captured



40+

Species habitats restored



610,909,091

Liters of water stored



2015 ECO LOCOMOTIVES SCORECARD

ROLLED OUT
25
LOW-EMISSION ECO LOCOMOTIVES

REDUCED
DIESEL EMISSIONS
IN ATLANTA AND CHICAGO

FORMED
NEW PARTNERSHIPS
TO EXPAND USE OF
ECO LOCOMOTIVES

Partnerships to reduce diesel emissions

Norfolk Southern considers it a corporate responsibility to mitigate the environmental impacts of its rail operations. Development of a new class of low-emission locomotives and innovative idle-reduction technology demonstrates the railroad's continuing commitment to industry leadership in sustainability best practices and environmental partnerships.

Three things NS did in 2015 to reduce rail yard emissions

1. Introduced the Eco locomotive, a locomotive rebuild program that recycles older locomotives and outfits them with new low-emission engines.
2. Rolled out the "Sleeper," an engine-heater system that eliminates unnecessary locomotive idling in winter months.
3. Expanded work on a rebuild program to create locomotive "slugs" – units with traction motors but no engines. The slugs are paired with diesel-powered locomotives to add emissions-free pulling power and reduce fuel burn.



NS' recycled Eco locomotives support community air quality

Norfolk Southern is helping communities enhance air quality with Eco locomotives, a new class of low-emission yard locomotives.

In 2015 public-private partnerships, NS introduced the Eco units at its Inman Yard in Atlanta and at its intermodal facilities in Chicago. NS delivered 10 of the locomotives to Atlanta and 15 to Chicago.

Branded "Eco" for their operating efficiencies in reducing emissions and fuel use, the locomotives were funded in part by federal Congestion Mitigation and Air Quality Improvement Program grants. These grants are available to projects that help states and localities reduce transportation-related emissions, improve air quality, and comply with federal Clean Air Act attainment standards.



Cleaner-burning engines

The 3,000-horsepower Eco engines reduce emissions regulated by the U.S. Environmental Protection Agency, including nitrogen oxides, or NOx, a contributor to ozone and linked to climate change, particulate matter, hydrocarbons, and smoke.

In Chicago, the partnership enables NS to replace its entire fleet of older switcher locomotives with cleaner-burning Eco units at its five major rail yards. NS received more than \$19 million through the CMAQ grant program as part of the \$30 million public-private partnership in Chicago.

THE EMISSIONS THAT 10 ECO LOCOMOTIVES WILL REDUCE ANNUALLY IN ATLANTA:



PARTICULATE MATTER



NITROGEN OXIDES

THE EMISSIONS THAT 15 ECO LOCOMOTIVES WILL REDUCE ANNUALLY IN CHICAGO:



PARTICULATE MATTER



NITROGEN OXIDES

Reducing life cycle emissions

The Eco locomotives were developed through NS' unique rebuild program that recycles older locomotive bodies and upgrades engines with newer technologies that maximize fuel economy and emissions reduction. For the Eco units, NS used the body frames of a locomotive model built in the 1980s and equipped them with new low-emission engines.

Recycling the older locomotives, rather than buying newly manufactured steel components, adds to the program's benefits by reducing production-related carbon emissions and lowering costs.



Learn more:

Visit NS' corporate website for more information about the low-emission Eco locomotives in [Atlanta](#) and [Chicago](#).

To enhance emissions reduction, each Eco unit can replace two older, less-efficient locomotives when paired with a "slug" – an industry term for a locomotive outfitted with traction motors for pulling power but no engine. NS built slugs for the Atlanta and Chicago partnerships.

More Eco partnerships for 2016

Norfolk Southern has entered into public-private partnerships that will bring Eco locomotives and emissions-free slugs to rail yards in Pittsburgh, Pa., and Macon, Ga. In 2016, NS is building two Eco locomotives and two slugs for delivery to Pittsburgh and five Eco units and two slugs for use in Macon.

Norfolk Southern's Sleeper: fuel savings and cleaner air

In 2015, Norfolk Southern began deploying the Sleeper, a customized plug-in engine heater system that reduces unnecessary locomotive idling and diesel emissions in cold weather. It was one of the company's key sustainability advancements.

With the Sleeper, NS achieves the "triple bottom line" of sustainability:

People: It enhances air quality in neighborhoods around rail yards.

Planet: It reduces diesel emissions linked to climate change.

Profit: It helps NS' bottom line by reducing fuel use and operating costs.

Public benefits are a driver

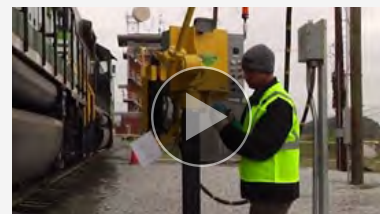
During 2015 and early 2016, Norfolk Southern joined with state and federal agencies to share the costs of installing Sleeper heaters in locomotives and wayside power stations at rail yards in Atlanta; Chicago; Kansas City Mo.; and six cities in Ohio. The primary purpose of these public-private partnerships is to help communities comply with their obligations and commitments under the federal Clean Air Act.

"This is a relatively inexpensive way for us and our public partners to accomplish a host of good public policy and private goals that any industry would want to achieve," said Darrell Wilson, assistant vice president government relations.

"Our goal is to get this done on the northern part of the railroad, where winters can get really cold, but that's not the stopping place," said Don Graab, vice president mechanical.

Norfolk Southern is the first large U.S. freight railroad to undertake a systemwide program using plug-in technology to reduce locomotive idling. Working with supply-chain partners, NS' Mechanical Department customized existing technologies to design a robust system for rail yards where locomotives shove and pull freight cars 24/7. In addition to conserving fuel, reducing emissions benefits the public. The availability of federal funds earmarked to reduce transportation-related emissions supported the effort.

"This was another step in our process of looking for newer and better ways to reduce fuel consumption," said Mark Duve, system manager locomotive reliability, who headed the project.



The Sleeper in action

Learn more about the Sleeper in this video at Norfolk Southern's Inman Yard.

Stakeholder collaboration and innovation

Norfolk Southern field-tested the Sleeper system in 2013 at one of its Chicago yards. Collaboration with suppliers produced an innovative design easy for train crews to use. For example, the power station features a retractable “power crane” equipped with a night light and other safety features. The crane went through four generations of design to perfect it.

“We’ve standardized that design across our system. NS essentially created a market for the power crane,” said Bruce Backus, electrical engineer locomotive design.

During the Chicago field trials, the Brotherhood of Locomotive Engineers and Trainmen and the United Transportation Union – unions representing train and engine crews at NS – contributed to improvements. They suggested heating the locomotive cab as well as the engine, leading to addition of a heating element that keeps the cab comfortable.



No antifreeze? No problem.

Diesel locomotive engines do not use antifreeze. To prevent freezing, locomotive engines traditionally are kept idling in winter months between operating shifts. With the Sleeper, locomotives can be shut off, plugged-in, and put to “sleep” regardless of the cold.

For interested rail fans, Sleeper is an NS acronym for: Stationary Locomotive Emissions Elimination Plug-in Electric Receptacle System.

PUBLIC PARTNERS PRAISE NS IDLE-REDUCTION TECHNOLOGY



A 'cool project' for Kansas City air quality

Norfolk Southern's Sleeper technology appealed to Kansas City, Mo., officials because the investment supports long-term commitments to cleaner air and to expanding freight rail business at a busy rail hub.

"This was a really cool project," said Doug Norsby, air quality planner at Mid-America Regional Council in Kansas City. "We liked that we could be a showcase for this technology, and, because we knew the dedicated infrastructure was here, we had confidence that emissions reductions would continue to occur in our area."

The regional council teamed with the Missouri Department of Natural Resources to obtain cost-sharing funds through the Diesel Emissions Reduction Act, a grant program administered by the EPA.

"When you have something that is really useful, really valuable in terms of emissions reduction and control," Norsby said, "using some public money to encourage business to take a risk and try some of these technologies can be really important."



Chicago partnership a first for EPA

In Chicago, Norfolk Southern and other railroads are partners with the Environmental Protection Agency in the Midwest Clean Diesel Initiative. This voluntary program promotes the use of technology and operational changes to reduce emissions from diesel engines and improve air quality in the Midwest.

Through this connection, EPA identified funding to help install the Sleeper technology at NS' Chicago rail yards. It is the first time EPA has partnered with a railroad in Chicago to reduce locomotive idling using plug-in heater technology.

"I think it's an innovative and cost-effective project that will be very beneficial," said Frank Acevedo, EPA mobile source program manager for Region 5. "It has a lot of potential to significantly reduce emissions that could have a direct impact on residential areas and public health here in Chicago."

EPA studies have shown that reducing locomotive idling is the most effective way to lower rail yard emissions, said Carolyn Persoon, an EPA environmental engineer. "Norfolk Southern," she said, "is addressing the biggest source of emissions in the yards and is doing something we know is effective in reducing emissions."

PUBLIC PARTNERS PRAISE NS IDLE-REDUCTION TECHNOLOGY



Good for Georgia neighborhoods

In Georgia, Norfolk Southern installed the Sleeper technology at four rail yards, including Atlanta, through a partnership with the Georgia Department of Natural Resources, Environmental Protection Division.

"Industrial sites, including rail yards, can generate 'hot spots' of emissions," said Rich McDonald, environmental engineer with EPD. "The Sleeper system should reduce those localized emissions and improve air quality in nearby neighborhoods."

"Eliminating those emissions is a good thing to improve health in our community. When all you're trying to do is warm up engine water so it doesn't freeze, this plug-in arrangement is a much more efficient and cleaner way to do it."



Growing business and reducing emissions in Ohio

In Ohio, Norfolk Southern initially is installing 21 plug-in heater stations to operate the Sleeper system in a half-dozen rail yards around the state, including Canton and Youngstown. Engine heaters will go on 26 yard and local locomotives. NS' public partner, the Ohio Rail Development Commission, provided matching dollars through the federal Diesel Emissions Reduction Act program.

"Ohio partnered with NS to lower diesel emissions in some of the state's most urbanized and industrial neighborhoods," said Matt Dietrich, executive director of the rail development commission. "By contributing public funds, the state can leverage private dollars for an initiative that will benefit public health and promote jobs and economic growth."

"We recognize that railroads produce emissions, but railroads are also critical to the economy," Dietrich said. "Basically, this program results in cleaner air for everybody."



2015 FUEL EFFICIENCY SCORECARD

410 MILES

HOW FAR NS MOVED A TON OF FREIGHT
ON ONE GALLON OF DIESEL

1.28 GALLONS

AMOUNT OF DIESEL FUEL CONSUMED
PER 1,000 GROSS TON MILES OF TRAIN MOVES

Setting a goal on fuel efficiency

Norfolk Southern in 2015 set a five-year goal to improve locomotive fuel efficiency as part of the company's strategic plan to reduce operating costs and improve the company's stewardship of resources.

The goal is to reduce fuel consumption by \$80 million per year by 2020. To achieve it, NS aims to improve overall locomotive fuel economy by nearly 9 percent from the 2015 baseline. NS has fuel-efficiency initiatives underway or in development to reach the goal. They range from train-handling technologies to operating strategies, such as running longer trains, which requires fewer locomotives and reduces fuel use.

NS' efforts to improve fuel efficiency will contribute to its goal to reduce carbon emissions. NS' current goal, expected to be updated in 2017, is to reduce GHG emissions by 10 percent per revenue ton-mile based on 2009 emission levels.

"We've been on a path of steady and consistent improvement in fuel efficiency going back several years," said Neville Wilson, director operations and locomotive control, who leads NS' fuel team. "We have initiatives in place that we believe can help us accelerate that progress."

2020 GOALS

\$80 MILLION

*Fuel consumption savings
based on 2015 prices*

1.17 GALLONS

*Diesel burn per 1,000 gross
ton-miles vs. 1.28 gallons in 2015*

8.6%

*Improvement in fuel economy
over 2015 baseline*



Following are two of the fuel team's most significant efficiency initiatives:

Follow the LEADER

Norfolk Southern's main fuel-efficiency program is LEADER, a train-handling technology that monitors a train's operating conditions and calculates the speed and dynamic braking required for maximum fuel efficiency. Train crews use an onboard touch-screen computer to operate the GPS-based system. NS has achieved average fuel savings of 5 to 7 percent on trains led by a LEADER-equipped locomotive.

By the end of 2015, NS had equipped more than 1,900 of its 2,600 road locomotives – nearly three-fourths of the road fleet – with LEADER software and hardware. In 2015, the number of trains operating with LEADER more than doubled – to 50 percent of all road trains, from 22 percent at the end of 2014. During the year, NS also completed employee training on use of LEADER, involving approximately 4,400 locomotive engineers and 3,900 conductors.

In 2016, NS for the first time will begin using Trip Optimizer train-handling technology developed by industry partner GE Transportation. Trip Optimizer, GE's version of LEADER, will be installed on 50 new GE Evolution locomotives NS plans to purchase. NS also expects to install Trip Optimizer on older GE locomotive models that receive engine upgrades through NS' locomotive rebuild program.

NS' plan to buy new locomotives and its rebuild program – in particular, an initiative to convert DC traction-motor locomotives to more efficient AC locomotives – support NS' goal to lower the average age of its locomotive fleet. Reducing the fleet's age increases reliability and contributes to reduced fuel consumption over time because fewer locomotives are out of service for repairs and maintenance. That means NS can operate a smaller locomotive fleet to meet business demands.



More information

A timeline of milestones and details about [LEADER](#), NS' flagship fuel-efficiency initiative, can be found in NS' 2015 sustainability report.

Matching horsepower with tonnage

Beyond LEADER, the most significant fuel conservation initiative is called Horsepower Per Ton, or HPT. Developed during 2015 and rolled out in early 2016, HPT provides train crews with specific guidelines on maximum locomotive horsepower to use based on train type, total tonnage, and direction.

Typically, several locomotives are assigned to a train. However, rarely are they all needed for the entire trip, because horsepower demands vary based on terrain and other operating conditions. HPT aims to reduce the number of locomotives used during any segment of the trip.

Using fewer units is more efficient operationally and saves fuel. Development is underway to incorporate HPT as an automatic feature of LEADER.

"We're leveraging on-board technology gained by installing LEADER, including GPS and track map information, to enable us to remotely idle LEADER-equipped locomotives in real time if not needed for pulling power," Wilson said. "This will make HPT even more dynamic as a fuel-efficiency tool."

NS FUEL ECONOMY BY THE NUMBERS

Norfolk Southern measures fuel efficiency in two ways: by revenue ton-miles and by gross ton-miles.

REVENUE TON-MILES: Fuel economy tied to revenue ton-miles, or RTM, is based on the tonnage of customers' freight moved in revenue service. In 2015, NS trains moved 199.7 billion revenue ton-miles of freight while consuming more than 486 million gallons of locomotive diesel fuel. On average, NS moved a ton of freight 410 miles per gallon of diesel burned. That compares with 415 miles per gallon in 2014, a decline of 1 percent. The decline is attributable largely to shifts in business mix, weather, and network traffic issues that resulted in congestion and increased train idling.

GROSS TON-MILES: The use of gross ton-miles, or GTM, provides the broadest look at fuel economy, taking into account fuel consumed by nonrevenue work trains, yard switching activity, and empty freight cars traveling on revenue trains. In 2015, NS trains moved 384.4 billion GTM. On average, NS consumed 1.28 gallons of diesel fuel per 1,000 GTM, achieving the same fuel economy as in 2014. NS is basing its 2020 fuel-efficiency goal on gross ton-miles. The 2020 target is 1.17 gallons per 1,000 GTM.

Since 2011, the company has improved fuel efficiency by 3 percent per 1,000 GTM.

Alternatives to reduce fuel use

Norfolk Southern is an industry leader in exploring alternative energy sources to reduce locomotive emissions. During 2015, NS made gains in battery technology and compressed natural gas.

A strategic shift on battery technology

Since the 2009 rollout of NS 999, a prototype battery switcher locomotive, Norfolk Southern has continued research into battery technology as an alternative energy source for locomotives. In 2015, the company made a strategic shift: Instead of focusing on tractive power in a full hybrid, NS now is exploring use of batteries for just the opposite – to allow locomotives to be shut down, thus reducing fuel burn and emissions from idling engines.

NS hopes to develop a “micro-hybrid” solution. The idea is to install a small battery pack on locomotives to operate critical electronic control systems, such as onboard train-handling equipment, while the locomotive is shut down. Similar to automobiles, locomotive electronics and other operating systems are run by the same battery pack that starts the engine, which requires a surge in power. As a result, locomotives often remain idling or go through an automated stop-start process when not moving freight to avoid draining the batteries while keeping those electronics running.



Economic and environmental benefits: Equipping the locomotive fleet with a micro-hybrid battery pack to reduce engine idling is much more cost-effective than building a fleet of hybrid-powered locomotives.

“We’re trying to use battery technology in a way that gives us the most fuel and emissions savings for the investment,” said Sean Woody, manager technology development and leader of the R&D effort. “Locomotives produce more emissions and are the least fuel efficient when they’re idling, so reducing idling time provides the most opportunity for improvement. We realize there’s tremendous payoff from doing that.”

Lessons learned: NS is applying lessons learned from six years of work developing the NS 999. The company’s micro-hybrid research includes looking at the best type of batteries to use, how much battery power is required, and forecasting system costs. Currently, battery technology remains too expensive and is not advanced enough to provide reliable locomotive tractive power – factors that played into NS’ strategic shift. An upgraded second-generation version of NS 999, tested in yard service during early 2015, was equipped with nearly 900 lead-carbon batteries, and maintenance was an ongoing issue.

“We still see the potential,” Woody said, “but the technology and the economics are just not there yet.”

NS builds and tests a CNG locomotive

Norfolk Southern continues to advance its knowledge of CNG technology as an alternative to diesel fuel to power locomotives.

In 2015, employees at NS' Juniata Locomotive Shop successfully modified a GP38-2 switcher locomotive engine to run entirely on compressed natural gas. The unit, which has not been put into service, is paired with a locomotive slug housing CNG cylinders that supply the equivalent of 1,000 gallons of diesel.

"It's built and it's functional," said Don Faulkner, general superintendent locomotive shops, who oversees NS' locomotive rebuild programs at Juniata Locomotive Shop, where work on the CNG prototype occurred.

NS is interested in the potential of CNG to reduce emissions of nitrogen oxides, particulate matter, and hydrocarbons compared with diesel-powered locomotives. NS in 2015 put the prototype through third-party emissions testing and is exploring ways to enhance its performance. Using CNG locomotives in revenue service would require federal approval, a topic of ongoing discussion among the industry and regulatory authorities.





2015 CARBON MITIGATION SCORECARD

COMPLETED PARTNERSHIP TO REFOREST

10,000 ACRES
IN THE MISSISSIPPI DELTA

EXPANDED PROTECTION OF

S.C. WOODLANDS

CREATED A

**WETLANDS
MITIGATION BANK**

Trees and trains add up to sustainable business

In 2015, Norfolk Southern completed a five-year community partnership to reforest 10,000 acres in the Mississippi Delta, the flagship project of the company's Trees and Trains initiative to mitigate carbon emissions the natural way. NS partnered with GreenTrees, the nation's leading reforestation program, committing \$5.6 million to plant more than 6 million trees.



Income for landowners: The Trees and Trains project is generating income for about 50 landowners who agreed to plant cottonwoods and native hardwoods on former woodlands that were converted years ago to farm fields but became marginally productive and prone to flooding. Over 15 years, the trees planted through Trees and Trains will generate more than 1.1 million metric tons of carbon credits that NS agreed to purchase through the partnership. NS can hold the credits to offset its business-related carbon emissions or sell them to recoup its investment. Participating landowners receive payments through NS' initial investment in the project.

Corporate opportunity: The project, which supports a region long served by NS, is an innovative way to invest in conservation, resulting in positive environmental, economic, and social impacts for the railroad and its stakeholders.

"The fact that Norfolk Southern said, 'We're in,' created a floor of certainty for landowners to make that land conversion," said Chandler Van Voorhis, GreenTrees co-founder and managing partner. "It told them, 'This is a big corporation saying, 'You grow it, I'll buy it.' Having NS as a buyer and an investor brought a comfort level that has enabled us to scale up and bring in other landowners outside of NS' particular territory. That's a part of the story that Norfolk Southern owns.

"More corporations are following Norfolk Southern's lead and investing in forestry initiatives as part of their sustainability efforts to offset carbon emissions and other environmental impacts," Van Voorhis said.

"It's not just carbon," he said. "It's biodiversity, it's water, it's impact in a community where the investment has been made."

NS turns land stewardship into profitable opportunity

Norfolk Southern's commitment to sustainable business practices extends to operations that are not directly tied to moving freight. As a large landowner in coastal South Carolina, NS has adopted an approach that generates environmental and economic benefits.

NS in 2015 launched a project to restore 290 acres of historic wetlands at its Brosnan Forest conference facility. The project, to be completed in 2016, will create valuable wildlife habitat and restore natural water hydrology while supporting economic development in the region. NS donated a conservation easement that will permanently protect the restored wetlands acreage.

This "wetlands mitigation bank" will generate 790 wetlands credits that NS, through a broker, can sell to offset wetlands impacted by development elsewhere in the region. The credits could be used, for example, to support development of rail-served industrial projects that would create new business for NS. With wetlands credits in coastal South Carolina currently priced from \$6,000 to \$8,000 each, NS potentially could earn more than \$6 million selling them.

Forest has railroad roots

Located about 35 miles northwest of Charleston, S.C., Brosnan Forest has been in railroad ownership since the 1830s, once serving as a source for track crossties and fuel for steam locomotives. In the 1920s, Southern Railway, an NS predecessor railroad, used the property as a laboratory for university forestry students and to demonstrate the economic advantages of planting property in woodland. These days, NS operates a small conference center at the Forest as a place to build business relationships with customers and to offer management employees an off-site location for strategic planning and brainstorming sessions.

EMPLOYEE SPOTLIGHT: Protect the planet, earn a profit

Josh Raglin, general manager facilities, has helped make Norfolk Southern a U.S. corporate leader in conservation capitalism, a business approach that turns conservation into opportunities for profit.

A biologist by training, Raglin manages NS' Brosnan Forest business center and 14,405-acre woodlands preserve. In 2008, Raglin helped NS pioneer a conservation easement that permanently protects 12,488 acres of the property from development, including more than 6,000 acres of rare longleaf pine forest. Since then, Raglin has spearheaded several initiatives showcasing conservation capitalism, including creation of a wetlands mitigation bank, his latest project. Through Raglin's efforts, NS has:



- Qualified the Forest for enrollment in both the Sustainable Forestry Initiative® and the Forest Stewardship Council by adopting best management forestry practices. While preserving plant and wildlife habitat, these certified practices increase the value of timber that NS allows to be periodically harvested as part of the property's management.
- Earned around 300,000 carbon offset credits for the Forest, working with Finite Carbon to verify and register the credits with the Air Resources Board in California. Through the ARB, NS sells the credits to companies desiring to offset their emissions. Over the past year, a carbon credit in the California market has traded in the \$9 to \$10 range.
- Expanded the number of endangered red-cockaded woodpeckers nesting at the Forest, creating the world's largest known colony on privately owned land under single ownership. Through a "safe harbor" agreement with wildlife and natural resource agencies, NS' efforts to expand the birds' population has earned 21 mitigation credits that NS can sell to developers wishing to build on property housing isolated pairs of the woodpeckers.



2015 GHG EMISSIONS SCORECARD

1.9 %

OVERALL DROP IN CO₂ EMISSIONS

6.1%

DROP IN ELECTRICITY-BASED EMISSIONS

80%

OF EMISSIONS-REDUCTION GOAL

A look at 2015 GHG emissions



Overall GHG decline

Norfolk Southern's total greenhouse gas emissions – Scope 1 direct emissions and Scope 2 indirect emissions – declined by nearly 2 percent in 2015.

The decrease reflects a 2.4 percent drop in business volume as measured by revenue ton-miles of freight moved by NS' diesel-burning locomotive fleet, the main source of NS' direct GHG emissions. In addition, NS reduced by 6.1 percent its Scope 2 emissions related to electricity use at railroad offices and facilities. This drop is attributed mainly to a milder winter, systemwide energy efficiency improvements, and the midyear closure of the company's Roanoke corporate office, part of an initiative to streamline business operations.

Update on GHG goal

In 2010, NS set a goal to reduce carbon emissions by 10 percent per revenue ton-mile. As measured against 2009 baseline emissions, the railroad in 2015 achieved a cumulative emissions reduction of 8 percent per RTM – down from 8.5 percent in 2014. Contributing to the slip were network congestion in the first half of the year and a changing business mix that included more time-sensitive freight, resulting in higher horsepower moves that increased locomotive fuel burn and emissions.

Locomotives in 2015 accounted for 90 percent of NS' total GHG emissions, or nearly 5 million metric tons. NS' goal is to reduce GHG emissions by 3 grams of CO₂ per RTM over the 2009 baseline. The company reduced cumulative emissions by 2.41 grams per RTM in 2015, compared with 2.56 grams in 2014. Initiatives designed to meet a fuel-efficiency goal set in 2015 will advance NS' efforts to reduce its GHG emissions.

Progress on energy emissions:

During the year, NS achieved a 7 percent reduction in non-locomotive Scope 1 emissions related to the use of fuels other than diesel, such as natural gas, propane, and coal. Nearly half of that reduction is associated with the company's reduced use of coal for power, including the elimination of coal-fired boilers in an energy-conversion project at Juniata Locomotive Shop.

Customer recognizes NS' sustainable rail solution

Customer Eastman Chemical Company presented Norfolk Southern with supplier sustainability and innovation awards in 2015 for a rail-based transportation solution that helped Eastman reduce its supply-chain carbon emissions and shipping costs.

NS' intermodal business group worked with Eastman's global logistics group in 2014 to offer rail transport of Eastman specialty plastics and wood-based products from an intermodal port facility in Greer, S.C., to the port of Charleston. Prior to the rail option, Eastman moved these containerized products by truck from its Kingsport, Tenn., plant to Charleston for export. The NS solution removed 212 miles of truck transport.



"The Norfolk Southern intermodal group made sure this was a value proposition that made sense for Eastman," said Debbie Davis Waltermire, Eastman's director of global logistics procurement. "Eastman has goals around sustainable growth and improved carbon footprint, and we felt that this gives us supply-chain efficiencies that allow for sustainable growth."

NS partnered with the South Carolina Ports Authority to provide rail service at the upland S.C. inland port facility, which opened in fall 2013. NS rail service between Greer and Charleston is helping to reduce supply-chain emissions of other customers, including BMW, Adidas, Michelin, and John Deere.

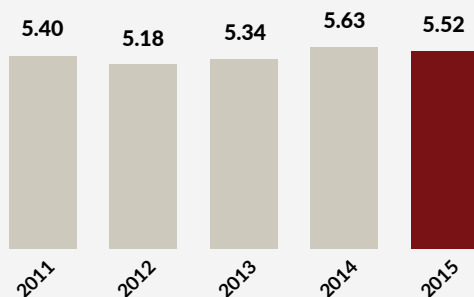


Reducing shippers' carbon footprint

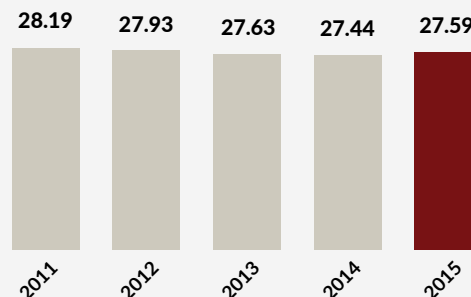
Shippers can reduce their supply-chain carbon emissions by moving products by rail instead of highway. Norfolk Southern's "**Green Machine**," a carbon footprint analyzer found on NS' website, offers shippers a quick estimate of carbon savings. On average, trains are four times more fuel-efficient and generate 75 percent fewer emissions than trucks.

NS business emissions

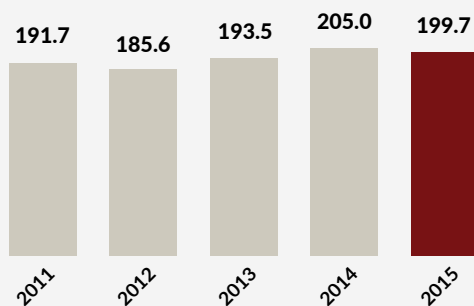
TOTAL SCOPE 1 AND SCOPE 2 EMISSIONS OF CARBON DIOXIDE EQUIVALENTS
(Million Metric Tons)



EMISSIONS PER REVENUE TON-MILE
(Grams)



TOTAL REVENUE TON-MILES OF FREIGHT
(Billions)



TOTAL RAILWAY OPERATING REVENUES
(Billions USD)

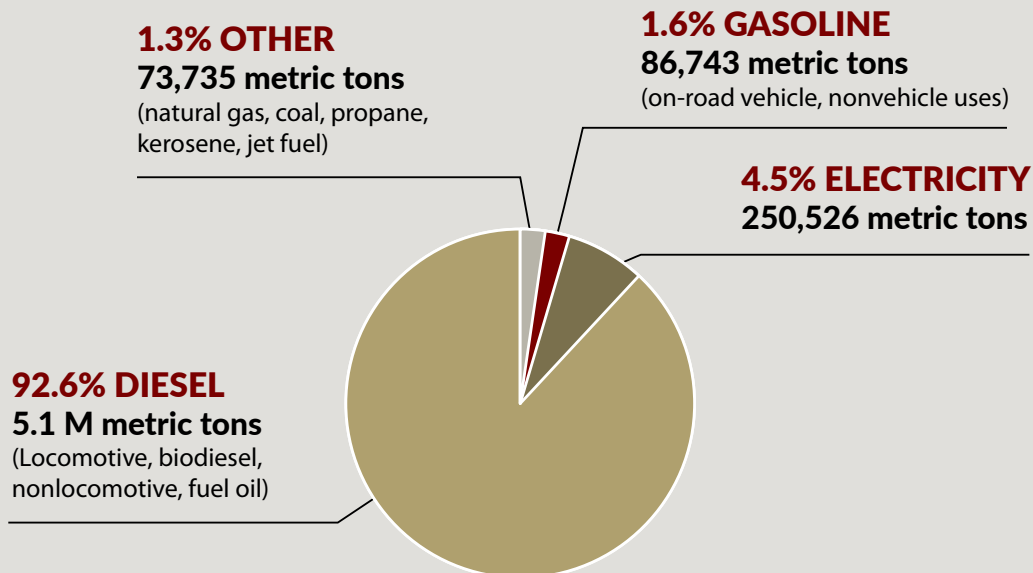


NS 2015 EMISSIONS
(in Metric Tons CO₂ Equivalents)

	Scope 1	Scope 2
CO ₂	5,219,275	249,253
CH ₄	10,052	107
N ₂ O	38,884	1,166
HFC, PFCs, SF ₆	0	0
Total	5,268,211	250,526

2015 EMISSIONS BY SOURCE

(TOTAL 5.5 MILLION METRIC TONS)



RECOGNITION



Corporate leader in GHG disclosure

For the second consecutive year, Norfolk Southern in 2015 was named a U.S. leader in disclosing greenhouse gas emissions and climate-change information to investors and the marketplace through CDP, an environmental nonprofit. NS achieved a score of 99 out of 100 for carbon disclosure to earn a place on CDP's 2015 S&P Climate Disclosure Leadership Index. The railroad scored within the top 10 percent of Standard & Poor's 500 Index companies that disclose information to CDP.



2015 ENERGY EFFICIENCY SCORECARD

434.9 MILLION
KILOWATT HOURS CONSUMED

6%
REDUCTION IN ELECTRICITY-RELATED
CO₂ EMISSIONS VS. 2014

4%
REDUCTION IN
KILOWATT HOURS VS. 2014

\$423,987
UTILITY REBATES FOR
ENERGY-EFFICIENCY UPGRADES

Juniata energy conversion: a sustainable business solution

Norfolk Southern in 2015 launched a two-year energy-conversion project at its Juniata Locomotive Shop that demonstrates the company's commitment to improved operating efficiencies and stewardship of resources.

The \$53 million project replaces the facility's heating and power systems, installing 21st century energy technologies to extend the life of a locomotive complex that has served America's freight rail needs since the late 1800s.

During 2015, NS replaced three 1950s coal-fired burners with cleaner, more efficient natural gas heaters. The company began installing a 1.2 megawatt combined heat and power unit that runs on natural gas and generates enough electricity to carry the complex's base power load – reducing reliance on the regional utility's power grid.

The project significantly reduces NS' environmental impacts. In 2015, largely as a result of the Juniata conversion, NS reduced by 39 percent its Scope 1 emissions associated with the company's use of coal for energy. NS generated 17,464 metric tons of CO₂ equivalent emissions from coal use, down from 28,570 metric tons in 2014. In addition, replacement of leaky pipes that transport steam water for shop operations is expected to save about 49 million gallons of water annually.





An NS investment in Pennsylvania

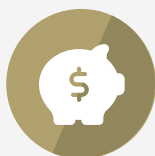
A complex of 16 shops, with 30 acres under roof, the Juniata Locomotive Shop in Altoona, Pa., is the largest locomotive repair facility in North America, with a Norfolk Southern workforce of about 950 mechanical employees. Juniata is NS' primary shop for engine overhauls and midlife tune-ups and is headquarters for the company's locomotive rebuild program – one of the largest railroad recycling programs ever.

Visit NS' [2015 sustainability report](#) to learn more about how employees refurbish and outfit 1980s and 1990s model locomotives with upgraded engines that are cleaner-burning and more fuel-efficient. The rebuild program and energy-conversion project represent long-term investments to continually improve NS' sustainability and business performance.

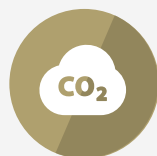
JUNIATA PROJECT: FAST FACTS



50%
Energy-efficiency
improvement



\$4 MILLION
Annual savings
in operating costs



58%
Annual reduction in
shop CO₂ emissions



49 MILLION
Annual water savings
in gallons

Cutting costs and energy use with lighting, HVAC upgrades

Norfolk Southern's energy services group in 2015 continued a long-range plan to improve energy efficiency in railroad facilities. The effort aims to cut operating costs, decrease electricity use, and reduce environmental impacts associated with carbon emissions.

Lighting efficiency

In 2015, the group oversaw lighting and HVAC replacements that are expected to generate annual energy and maintenance savings of more than \$2.1 million.

The lighting projects equipped 31 facilities across the system with replacement bulbs and fixtures that last longer, use less energy, and emit a spectrum of light that enhances safety and security of night operations. The projects included seven NS intermodal facilities and yards in Chicago; its Harrisburg, Pa., intermodal facility; and its Shelbyville, Ky., auto mixing center.

2015 LIGHTING PROJECTS

9,692

Fixtures replaced

31

Railroad facilities

\$4.9 MILLION

Investment

2.6 YEARS

Average payback

13.6 MILLION

Kilowatt-hour electricity reduction

\$2 MILLION

Annual energy & maintenance savings

9,539 metric tons

Annual estimated CO₂ savings

By reducing the demand for power generation, the lighting projects are generating carbon savings equivalent to the energy needed to provide electricity to 1,409 homes for a year.

HVAC efficiency

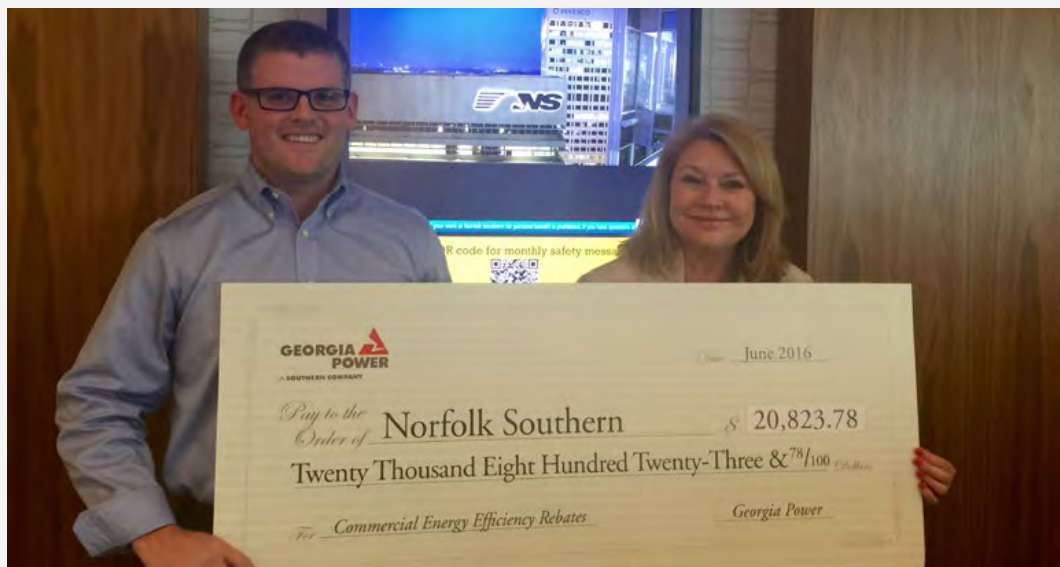
The energy group's systematic approach to its heating, ventilating, and air-conditioning efficiency program looks for total building solutions to replace aging, uneconomical HVAC systems. In 2015, the group completed projects targeting natural gas conversions from fuel oil, reconfiguration of ducting, and the addition of system controls. HVAC replacement systems had an average seasonal energy efficiency rating of 18, better than the industry standard 13.

In addition to operational and environmental savings, the HVAC projects enhance working conditions for yard and shop employees.

2015 HVAC PROJECTS

14	7	\$251,539	\$163,224
<i>HVAC systems replaced</i>	<i>Railroad facilities</i>	<i>Investment</i>	<i>Annual operational savings</i>

Energy upgrades at NS' Atlanta office earn rebates



As part of energy-efficiency upgrades in 2015 at its operations headquarters in Atlanta, Norfolk Southern earned more than \$20,820 in rebates through Georgia Power's Commercial Energy Efficiency program. Improvements to the Goode Building in Midtown included installing more efficient lighting, lighting occupancy and daylight sensors, and variable frequency drives on heating and air-conditioning equipment.

The upgrades are expected to reduce the high-rise building's annual energy use by more than 654,000 kilowatt-hours, lowering emissions of carbon dioxide equivalents by 540 metric tons. That's equivalent to the typical annual energy use of more than 50 residences in the region.



2015 WASTE MANAGEMENT SCORECARD

361,096 TONS
WASTE GENERATED 6%↓

77%
LANDFILL DIVERSION
VS. 82% IN 2014

82,665 TONS
TO LANDFILL 23%↑

Efforts to improve waste management

Norfolk Southern in 2015 completed the second year of an ongoing review to track and improve data collection and management of its business waste streams – a challenging task encompassing hundreds of work locations across 22 states.

For the year, NS reduced total waste generated by 6 percent – a desired outcome. However, data collection indicated that a higher percentage of waste than in 2014 was sent to landfills, which NS is reviewing. In particular, NS is interested in increasing “blue bin” recycling rates at offices, yard, shop, and field facilities. In 2015, only 6 percent of such trash, including cans, bottles, and paper, was recycled.

NS has formed a task force that is exploring opportunities to expand recycling, minimize waste, and reduce costs associated with waste management. The company in 2016 is evaluating third-party waste management services to apply lessons learned from data collected over the past two years.



MATERIALS DIVERSION (in tons)



Recycled trash
1,121



Recovered oil
5,280



Mixed scrap metal & steel
80,401



Crossties
185,724



Batteries (includes
lead-acid/nickel-cadmium)
277



Fluorescent light bulbs
2.6



Solvent recovery/
Paint recycle
3.9

Recycling and reusing waste oils

In 2015, Norfolk Southern recycled 100 percent of used oil collected at 26 locomotive and rail car shops across the network. The company's strategic sourcing group initiated this recycling program in 2013 as part of a life cycle sustainability initiative to control spending, enhance operating efficiencies, and improve stewardship of resources.

The program's goal is to reuse the oil to heat shop facilities to reduce utility costs or sell it to third-party vendors for recycling and reuse. A third-party vendor collected 1.14 million gallons of used oil from NS in 2015. The vendor resells the oil for use in heating, manufacturing asphalt, or producing lube oil products.

Oil recycled through this program represents 86 percent of used oil generated by NS business operations. The remaining 14 percent includes oil recovered from track equipment in the field by NS rail gangs. NS reuses, recycles, or properly disposes of used equipment oils in accordance with environmental laws and regulations.

1.44 MILLION GALLONS
USED OIL AND OILY WATER
RECYCLED IN 2015

Proactive crosstie recycling

The wooden crossties that hold steel rails in place are a vital part of railroad track infrastructure. Norfolk Southern installed 2.4 million in 2015 alone. As part of sustainability efforts, NS works with vendors to recycle older crossties removed from rail service.

In 2015, NS stepped up those efforts, creating a service contract for a vendor to immediately collect crossties removed by timber and surfacing gangs. The T&S gangs install new crossties and stage the removed ties near the track for collection.



"It's an organized effort to pick up the ties in a timely fashion," said Carla Groves, senior manager purchasing. "Having the vendor follow the gangs enables us to be more proactive, which helps the environment and increases operating efficiencies."

2015 RECYCLED CROSSTIES

Energy use:	Landscaping:	Reused internally:
100,163 TONS	58,080 TONS	27,481 TONS

Reducing NS' environmental footprint

Norfolk Southern operates a robust environmental protection program to ensure that railroad operations meet or exceed government rules and regulations put in place to protect the environment, including air and water quality.

Following are three examples from 2015 that highlight NS' efforts to minimize the environmental impact of business operations in communities served by the railroad.

Capital upgrades: Invested \$7.9 million in railroad yard, shop, and field facilities such as wastewater treatment plants, spill containment systems, and stormwater management systems to ensure environmental compliance.

Site remediation: Completed remediation projects on 15 impaired properties in compliance with state environmental requirements. Among them is a 100-acre former rail car shop facility in Lenoir City, Tenn., that NS is helping local and state economic development officials market for industrial redevelopment, bringing new jobs and tax revenue to the community.

Tank car safety: Participated in and led industry efforts to enhance the safety of transporting flammable liquids by rail, including crude oil and ethanol. These efforts resulted in development of a new proposed tank car construction standard designed to reduce the chances of an explosion if a car derailed, leaked, and caught fire. The proposal garnered broad stakeholder support, including from the rail industry, tank car manufacturers, chemical shippers, and thermal blanket manufacturers.

GRI G4 INDEX



GRI G4 INDEX

GENERAL STANDARD DISCLOSURES

SECTION	DISCLOSURE #	DISCLOSURE COMPILATION ITEMS	PAGE #/ANSWER
Strategy and Analysis	G4-1	Provide a statement from the most senior decision-maker of the organization.	CEO Message
	G4-2	Provide a description of key impacts, risks, and opportunities.	Reporting & Materiality CDP Response
Organizational Profile	G4-3	Report the name of the organization.	Strategy and Performance Customer Service
	G4-4	Report the primary brands, products, and services.	Reporting & Materiality
	G4-5	Report the location of the organization's headquarters.	Reporting & Materiality
	G4-6	Report the number of countries where the organization operates.	Economic Engine
	G4-7	Report the nature of ownership and legal form.	Annual Report
	G4-8	Report the markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).	Economic Engine
	G4-9	Report the scale of the organization.	Corporate Profile
	G4-10	Breakdown by employee type.	Workforce Snapshot
	G4-11	Report the percentage of total employees covered by collective bargaining agreements.	Workforce Snapshot
Identified Material Aspects and Boundaries	G4-16	List memberships of associations (such as industry associations) and national or international advocacy organizations.	Governance
	G4-17	List all entities included in the organization's consolidated financial statements or equivalent documents.	Annual Report
	G4-18	Explain the process for defining the report content and the Aspect Boundaries.	Reporting & Materiality
	G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	Reporting & Materiality

SECTION	DISCLOSURE #	DISCLOSURE COMPILATION ITEMS	PAGE #/ANSWER
Stakeholder Engagement	G4-24	Provide a list of stakeholder groups engaged by the organization.	Stakeholder Engagement
Report Profile	G4-28	Reporting period for information provided.	Reporting & Materiality
	G4-30	Reporting cycle.	Reporting & Materiality
	G4-31	Provide the contact point for questions regarding the report or its contents.	Reporting & Materiality
	G4-32	Report the 'in accordance' option the organization has chosen.	Reporting & Materiality
Governance	G4-34	Report the governance structure of the organization, including committees of the highest governance body.	Governance
	G4-35	Report the process for delegating authority for economic, environmental, and social topics from the highest governance body to senior executives and other employees.	Governance
	G4-36	Report whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental, and social topics, and whether post holders report directly to the highest governance body.	Governance
	G4-38	Report the composition of the highest governance body and its committees.	Governance
	G4-39	Report whether the Chair of the highest governance body is also an executive officer.	Governance
	G4-40	Report the nomination and selection processes for the highest governance body and its committees, and the criteria used for nominating and selecting highest governance body members.	Governance
	G4-41	Report processes for the highest governance body to ensure conflicts of interest are avoided and managed.	Governance
	G4-45	Report the highest governance body's role in the identification and management of economic, environmental, and social impacts, risks, and opportunities.	Governance
	G4-46	Report the highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental, and social topics.	Governance
	G4-48	Report the highest committee or position that formally reviews and approves the organization's sustainability report.	Governance
	G4-51	Report the remuneration policies for the highest governance body and senior executives.	Governance
	G4-52	Report the process for determining remuneration.	Governance

SECTION	DISCLOSURE #	DISCLOSURE COMPILATION ITEMS	PAGE #/ANSWER
Ethics and Integrity	G4-56	Describe the organization's values, principles, standards, and norms of behavior such, as codes of conduct and codes of ethics.	Governance
	G4-57	Report the internal and external mechanisms for seeking advice on ethical and lawful behavior and matters related to organizational integrity, such as helplines or advice lines.	Governance
	G4-58	Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms, or hotlines.	Governance

SPECIFIC STANDARD DISCLOSURES

CATEGORY	ASPECT	#	DISCLOSURE	PAGE #/ANSWER
Economic	Economic Performance	G4-EC1	Direct economic value generated and distributed.	Economic Engine
	Economic Performance	G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	CDP Response
	Indirect Economic Impacts	G4-EC7	Development and impact of infrastructure investments and services supported.	Economic Engine
	Indirect Economic Impacts	G4-EC8	Significant indirect economic impacts, including the extent of impacts.	Economic Engine
	Procurement Practices	G4-EC9	Proportion of spending on local suppliers at significant locations of operation.	Supply Chain
Environmental	Materials	G4-EN1	Materials used by weight or volume.	Waste Management
	Materials	G4-EN2	Percentage of materials used that are recycled input materials.	Waste Management
	Energy	G4-EN3	Energy consumption within the organization.	Energy Efficiency
	Energy	G4-EN5	Energy intensity.	Energy Efficiency
	Energy	G4-EN6	Reduction of energy consumption.	Energy Efficiency
	Biodiversity	G4-EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	Carbon Mitigation

CATEGORY	ASPECT	#	DISCLOSURE	PAGE #/ANSWER
Environmental	Biodiversity	G4-EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	Carbon Mitigation
	Biodiversity	G4-EN13	Habitats protected or restored.	Carbon Mitigation
	Emissions	G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1).	GHG Emissions
	Emissions	G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2).	GHG Emissions
	Emissions	G4-EN18	Greenhouse gas (GHG) emissions intensity.	GHG Emissions
	Emissions	G4-EN19	Reduction of greenhouse gas (GHG) emissions	GHG Emissions
	Emissions	G4-EN21	NOx, SOx, and other significant air emissions.	GHG Emissions
	Effluents and Waste	G4-EN23	Total weight of waste by type and disposal method.	Waste Management
	Effluents and Waste	G4-EN25	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention. Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	Waste Management
	Effluents and Waste	G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff.	Carbon Mitigation
	Products and Services	G4-EN27	Extent of impact mitigation of environmental impacts of products and services.	Carbon Mitigation
	Compliance	G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	Governance
	Transport	G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce.	Eco Locomotives
	Overall	G4-EN31	Total environmental protection expenditures and investments by type.	Economic Engine Waste Management

CATEGORY	ASPECT	#	DISCLOSURE	PAGE #/ANSWER
Labor Practices and Decent Work	Employment	G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender, and region.	Workforce Snapshot
	Occupational Health and Safety	G4-LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	Workplace Safety
	Occupational Health and Safety	G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender.	Workplace Safety
	Training and Education	G4-LA9	Average hours of training per year per employee by gender, and by employee category.	Workplace Safety
	Training and Education	G4-LA10	Programs for skills management and life-long learning that support the continued employability of employees and assist them in managing career endings.	Training
	Diversity and Equal Opportunity	G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	Workforce Snapshot
Society	Local Communities	G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	Philanthropy
	Local Communities	G4-SO2	Operations with significant actual and potential negative impacts on local communities.	Community Safety
	Public Policy	G4-SO6	Total value of political contributions by country and recipient/beneficiary.	Stakeholder Engagement
	Anti-competitive Behavior	G4-SO7	Total number of legal actions for anti-competitive behavior, antitrust, and monopoly practices and their outcomes.	No legal actions in 2015