



KEEPING OUR ECONOMY MOVING

# THIS IS BNSF.

2018/2019 CORPORATE SUSTAINABILITY REPORT



**CEO MESSAGE**

**SAFETY**

**GROWTH & CAPABILITY**

**EFFICIENCY**

**TECHNOLOGY**

**PEOPLE**

**COMMUNITY**

**MATERIAL ISSUES**

**APPENDIX**



# CEO MESSAGE

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What railroads do is always important and that's certainly true now during these unprecedented times. While the technology has evolved, the basic concept of steel wheels on steel rails to efficiently move large loads is just as relevant today as it was during the origins of our railroad more than 170 years ago.

By its very nature, rail is the most sustainable way to move goods long distances over land. The inherent efficiencies of rail generate value for our customers and communities by reducing transportation emissions and carbon footprint, increasing safety for local communities and driving growth and economic value for BNSF and our customers. And since rail is the most sustainable mode of land transportation, the more freight we take off the road, the lower the impact is on the environment.

We are proud of the thousands of men and women who without fail show up to work every day ready to deliver on our promise to safely transport the essential goods our country needs. Railroading is a high calling and our people have answered the call. Despite today's monumental public health challenge, our entire BNSF team has shown incredible perseverance. We are humbled by the dedication that our employees have shown during these trying times.

From the outset of the pandemic, we've had two main objectives: Protect the health of our employees and keep trains running. As the situation and environment around us have evolved, we have continued to adapt.

The intent of our 2018/2019 Corporate Sustainability Report is to highlight some of the strides we have made in our journey toward operating an ever more sustainable railroad. So many things have changed in our daily lives this year, but our focus on safety has remained constant. That's why it's the first topic you will see highlighted in this report.

2019 was the first time in our long history that we finished the calendar year without an employee fatality and at the time of this writing it has been over two years. This is a significant event that's an important milestone and tells us our vision of operating a railroad free of accidents and injuries is attainable. We know that preventing and eliminating workplace accidents and injuries is within our grasp and we are confident that together we can achieve it.

We know that in order to be successful we must also pay close attention to our growth, capabilities, efficiency, technology, our people and the communities we serve. Consequently, we have chosen to highlight our progress in each of these areas as well.

At BNSF, we also look to continuously challenge the status quo. Diversity is important to all of us and we know that we have the opportunity to continue making an impact. The success of our journey requires all of us to value the differences we each bring to the workplace.

We believe that intentionally creating a culture of equality and inclusion is how we can achieve our tremendous potential as individuals and as a company. We believed that 25 years ago when BNSF and our values were created and we believe it today. As we look to the future, we will remain focused on keeping our economy moving by safely and efficiently delivering essential goods in an ever more sustainable way.

**Carl Ice**  
**President and Chief Executive Officer**

**Katie Farmer**  
**Incoming President and Chief Executive Officer**

# SUSTAINABLY DRIVING OUR ECONOMY FORWARD

BNSF plays a vital role in our economy by sustainably moving millions of tons of freight from where they are to where they need to go, and doing so safely and reliably. As the world and our nation continue to change and evolve, BNSF is prepared to meet the needs of our customers, employees and communities by providing the most sustainable mode of land-based freight transportation. Through our various service offerings and programs, BNSF transports the consumer, industrial, agricultural and energy products that are essential to our nation's supply chain.

For the purposes of this report, we focused on initiatives and accomplishments from 2018 and 2019 unless noted. We used the framework outlined in *This is BNSF* to cover topics critical to our business, employees, communities, customers, the environment, our owners and the economy as a whole. We believe that ensuring the safety and wellbeing of our employees and communities, reducing our environmental impacts and growing our business capabilities to support our customers and drive economic success lead to long-term value and prosperity. As we look to the future, BNSF will continue to partner with our stakeholders to become ever more sustainable while maintaining our focus on operating safely and keeping the economy moving.

## BNSF KEEPS ESSENTIAL GOODS MOVING



### CONSUMER GOODS

Cleaning products, food and beverage goods and medical supplies

### PUBLIC HEALTH

Chlorine-based products to treat our water supply

### AGRICULTURE

Grains for feed, food products and fertilizers

### ENERGY

Products that generate electricity and fuel our cars

# THE BNSF NETWORK



**32,500**

Route Miles

**25**

Intermodal  
Facilities

**3**

Canadian  
Provinces

**~4,500**

Road Locomotives\*

**28**

States

**40+**

Ports

**~36,000**

Employees\*\*

\*2020 average active road locomotive fleet

\*\*Employee count as of October 2020

KEEPING OUR ECONOMY MOVING **THIS IS BNSF.**

# SAFETY

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For BNSF, nothing is more important than safety. Our approach to safety is built on the personal responsibility that every BNSF team member brings for themselves, their colleagues, communities, our customers' freight and the environment.

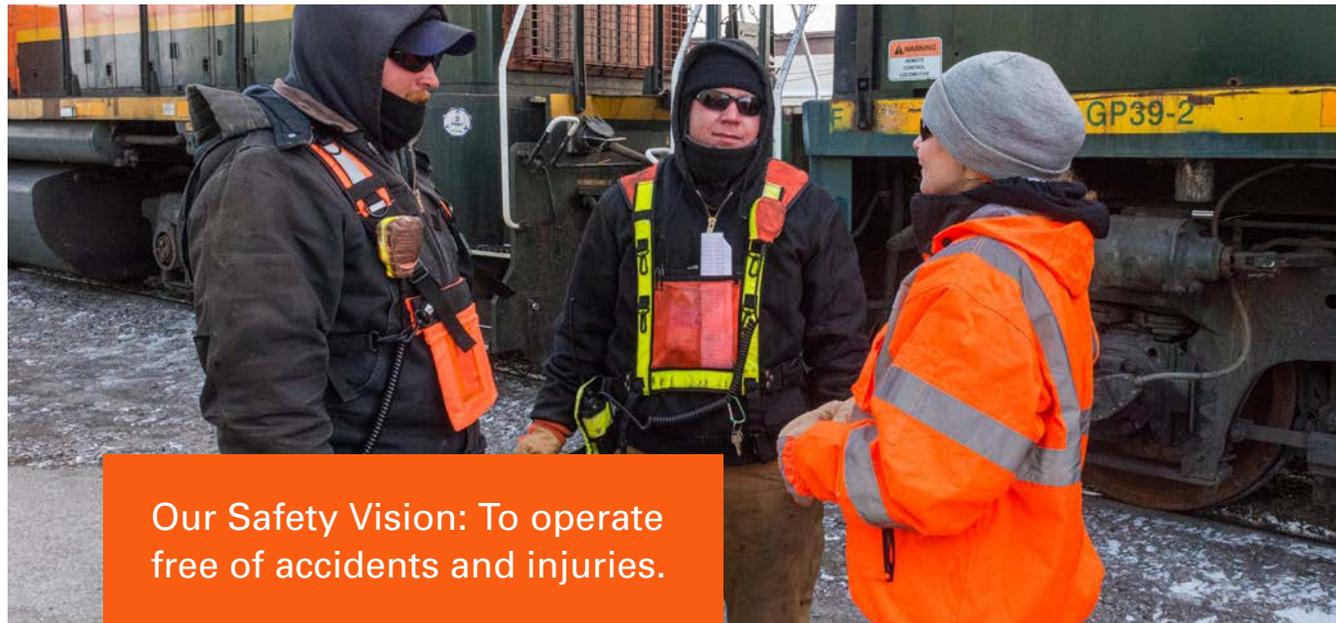


# SAFETY

No matter what we are moving, nothing is more important than safety at BNSF. Our focus is always on the safety of our employees, communities and the environment.

BNSF regularly conducts extensive track, bridge, rail and weather-event inspections to ensure safety and reliability across our network. Our specially trained inspectors use a combination of instrument-equipped rail cars and trucks, bridge inspection vehicles and Unmanned Aerial Systems to ensure that our entire network meets our rigorous standards for safety and reliability. We employ a variety of tools such as autonomous track measurement systems, internal rail ultrasounds, ground-penetrating radar, high-definition cameras and accelerometers to analyze roadbed, track and bridge conditions.

Every day we pursue our vision of a workplace free of injuries and accidents. We strive to make this vision a reality by fostering a robust safety culture where BNSF employees are mindful of their tasks at hand and take responsibility for



Our Safety Vision: To operate free of accidents and injuries.

completing them safely. We create and reinforce BNSF's safety culture through training and comprehensive safety rules and practices, including federal regulations, rail industry recommendations and our own initiatives. We are vigilant in reviewing and adapting our safety procedures to ensure that we provide the safest possible working conditions for our workforce and communities.

## Approaching Others About Safety

Our *Approaching Others About Safety* initiative has helped us make fundamental changes in how we address safety. The initiative is a part of our company culture and impacts our employees' lives in a positive way. It continues to generate thousands of conversations every day among BNSF team members, helping us find ways to minimize risk and eliminate injuries for individuals and work teams. The program instills confidence in our employees to be effective when speaking to each other about safety. Because we know the exposures that cause approximately 97% of rail industry injuries and fatalities, this initiative addresses these exposures head on to reduce and eliminate the associated risks.



“ At BNSF, we have a culture of safety that is embedded in the core fabric of our company. Building on our Safety Vision, in 2019 and going into 2020, we challenged ourselves to find the next step-level change in safety. ”

**MATT IGOE, EXECUTIVE VICE PRESIDENT & CHIEF OPERATING OFFICER**

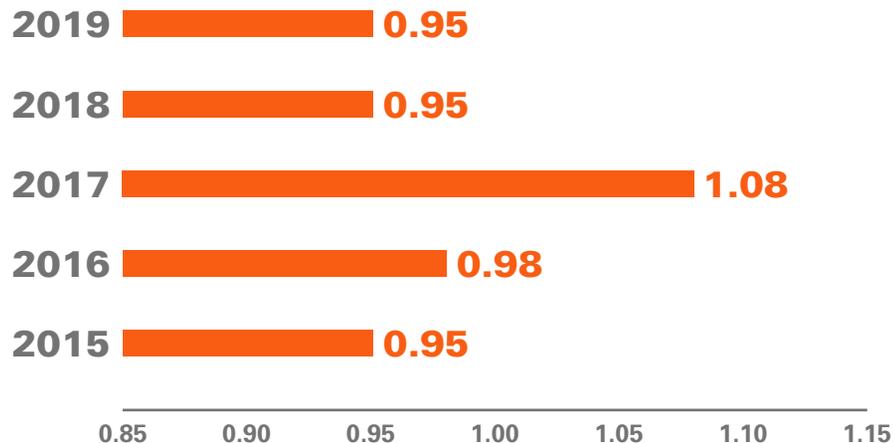
## Safety Training

Complementing the *Approaching Others About Safety* initiative are multiple formal and informal safety trainings. Our formal training programs include those required by federal regulations, as well as technical rules and rail industry recommendations informed by the most cutting-edge practices from across our industry. Additionally, BNSF encourages and sponsors company-specific informal training initiatives developed and conducted by our own employees.

For a number of safety training initiatives, BNSF utilizes our Technical Training Center (TTC) in Overland Park, Kansas, including employee courses and simulations on the safe operation of locomotives, cranes, crossing gates and other safety-critical equipment. Between 2018 and 2019, BNSF trained more than 8,800 employees at the TTC, in addition to nearly 35,000 trained in the field.

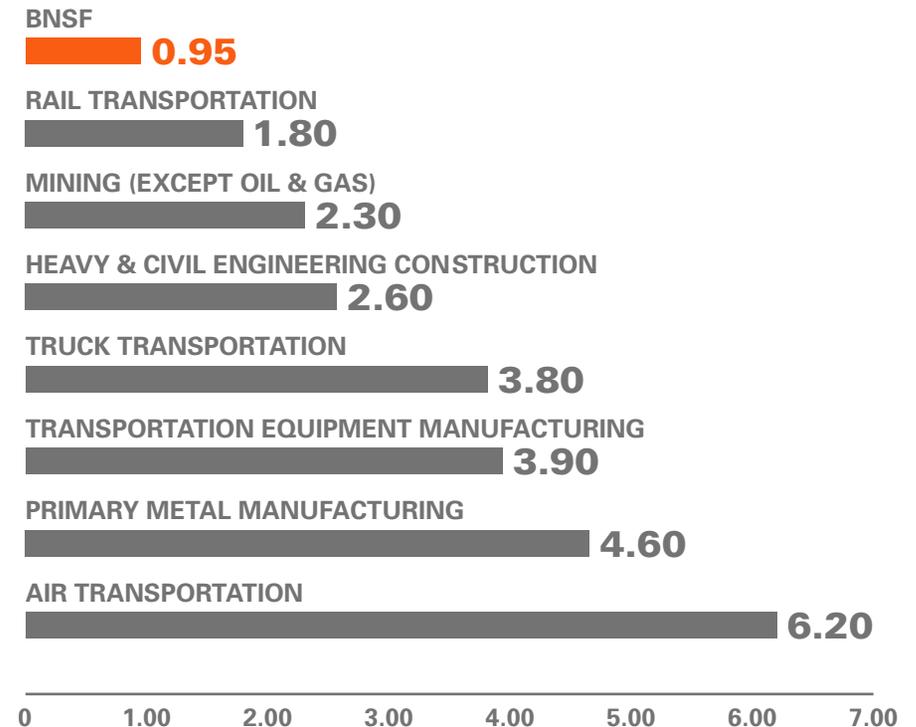
## REPORTABLE INJURY FREQUENCY RATE

(PER 200,000 EMPLOYEE HOURS)



## INJURY RATE VS. INDUSTRY AVERAGES\*

(PER 200,000 EMPLOYEE HOURS)



\*Injury rates for BNSF and the rail industry are quoted based on Federal Railroad Administration 2019 year-end data. All other data is from the year 2018 from the Bureau of Labor Statistics.

## Spill Prevention & Hazardous Materials Handling

At BNSF, we recognize a safe and secure rail network is essential to our nation's future. Preventing spills and properly handling hazardous materials keep our employees, communities and the environment safe. That is why we are always focused on the prevention, mitigation and response to any potential incident.

As common carriers, we are required under federal law to make reasonable accommodations to transport any commodity, including hazardous materials, as long as government standards are met.

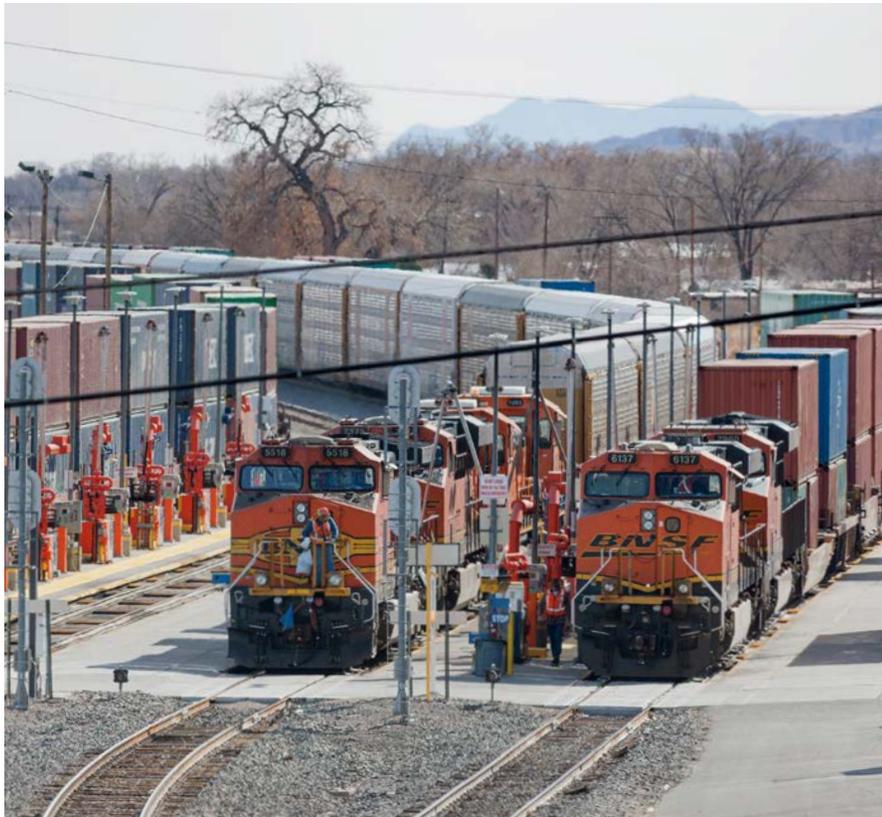
Across our network, we maintain robust processes to ensure the safe and proper handling of hazardous materials.

To ensure our program uses the most up-to-date practices, BNSF brings together cross-functional teams to identify and implement best practices to prevent and minimize spills. We provide our employees access to online training to learn proper fueling procedures as well as best practices for loading and storing hazardous materials.

As a means to measure our performance and support continuous improvement, we conduct a thorough analysis of significant spill incidents.

BNSF's leadership teams regularly review spill performance data and communications to actively support spill-prevention efforts as a critical means to protect our people, local communities and the environment.

To further support spill-prevention efforts, a new *Used Oil and Diesel Fuel Recovery Dashboard* was created to track recovered fuel and oil collected from our wastewater treatment systems, along with large spills and unique events that contribute to the overall recovered fuel and oil volume. We are using the data from the Dashboard to prioritize and implement these same spill-prevention best practices across our network's fueling facilities.



## Best Management Practices to Prevent Loss of Locomotive Fuel & Lubricants

BNSF's Belen, New Mexico, facility is our network's largest fueling location, with annual volumes between 265–300 million gallons per year. In 2016 and 2017, as a collaboration between BNSF's Mechanical, Environmental Operations/Engineering and Fuel Management teams, we analyzed our spill-prevention measures at the Belen yard via root-cause to identify the sources of fuel and lubricant leaks from our locomotive fleet.

This analysis and investigation led to new spill-prevention and control measures, which greatly reduced the frequency and amount of spills, ultimately achieving a reduction of diesel and lubricating oil recovery and treatment efforts at Belen in 2019.



## Emergency Response & First-Responder Training

Being prepared and preventing incidents in the first place is the best way to keep everyone safe. We recognize that incidents can occur, and that strong emergency response can help minimize their scope and duration. For this reason, BNSF has more than 180 hazardous materials responders and advisors trained to tackle any situation involving a spill or release. In the unlikely event of an emergency involving our railroad, these first responders are essential for an expeditious and decisive response to everything from a small spill to a major release. We also maintain emergency-response equipment strategically placed at more than 60 locations across our network to support quick and effective hazmat response at all times.

In 2016, BNSF designed a modified boxcar as a mobile classroom to deliver training to first responders across our network. We added a second classroom car in 2017 enabling us to provide mobile instruction with a training tank car in the eastern and western parts of our network.

We use our hazmat-training equipment to deliver free, practical, hands-on training to first responders that prepares them to safely and effectively respond to railroad hazmat incidents. Because the boxcar classroom comes to students, municipalities are able to save both time and travel costs for participants, while receiving high-quality, safety-critical hazmat training in rural areas.

BNSF proudly works in partnership with other rail industry organizations to provide training for emergency hazmat response teams through the [Transportation Community Awareness and Emergency Response](#) (TRANSCAER) program. Since our first-responder training effort began in 1996, we have trained more than 125,000 emergency responders on proper response to a rail hazmat incident. Our contributions to this partnership have led to BNSF being consistently recognized with the TRANSCAER National Achievement Award—2020 marks the 20th year we have received this distinction. Learn more about our first-responder training in [Rail Talk](#) and our [2019 Annual Review](#). Read more about our hazmat efforts [here](#).

## Fire-Fighting Trains

Our trains operate across much of the West, where drought conditions and high winds are common. Although we take steps to prevent fires, they can and do occur, from lightning strikes, trespassers or other sources. Extinguishing fires quickly allows us to resume service and minimize or prevent damages to properties—ours and our neighbors'. BNSF routinely stages train cars full of water in locations within our network prone to wildfire, including in Washington, Oregon and California.

Our fire-fighting trains can carry 30–40 times the amount of water as a fire truck. Further, they contain other vital capabilities to help respond to fires, such as generators that power emergency equipment. These trains enable BNSF to fight fires in collaboration with local firefighters. Firefighters can board the caboose at designated access points where BNSF crews then move the train to the fire, often in areas fire trucks cannot easily access. Read more about our firefighting train fleet in [Rail Talk](#).

## Weather Preparedness

Timely and efficient transport of goods across our network is key to us, our customers and our communities, and weather is a major factor that can disrupt service. To prepare for weather-related service disruptions, we conduct rigorous weather-event monitoring, including track, bridge and rail inspections to ensure the safety and efficiency of our infrastructure in the face of such disruptions. On many routes, including key routes that carry a greater number of shipments and hazardous materials, we conduct inspections that exceed Federal Railroad Administration requirements.

We also use cutting-edge tools, such as Daisy Bell® acoustic technology to help monitor and mitigate avalanche disruptions. Each year, BNSF's 10 operating divisions create winter action plans to ensure resources and procedures are in place to minimize impact and risk from winter weather. Read more about how we respond to extreme winter weather in [Rail Talk](#).

Whenever we rebuild a section of track, we take steps to improve its resilience to avoid future disruption and damage from extreme conditions. For example, in March 2019, flooding across portions of Nebraska, Iowa and Missouri disrupted BNSF's service and operations. We worked around the clock to restore service and fortify sections of our network to help mitigate additional flooding disruptions.



## Grade-Crossing Safety

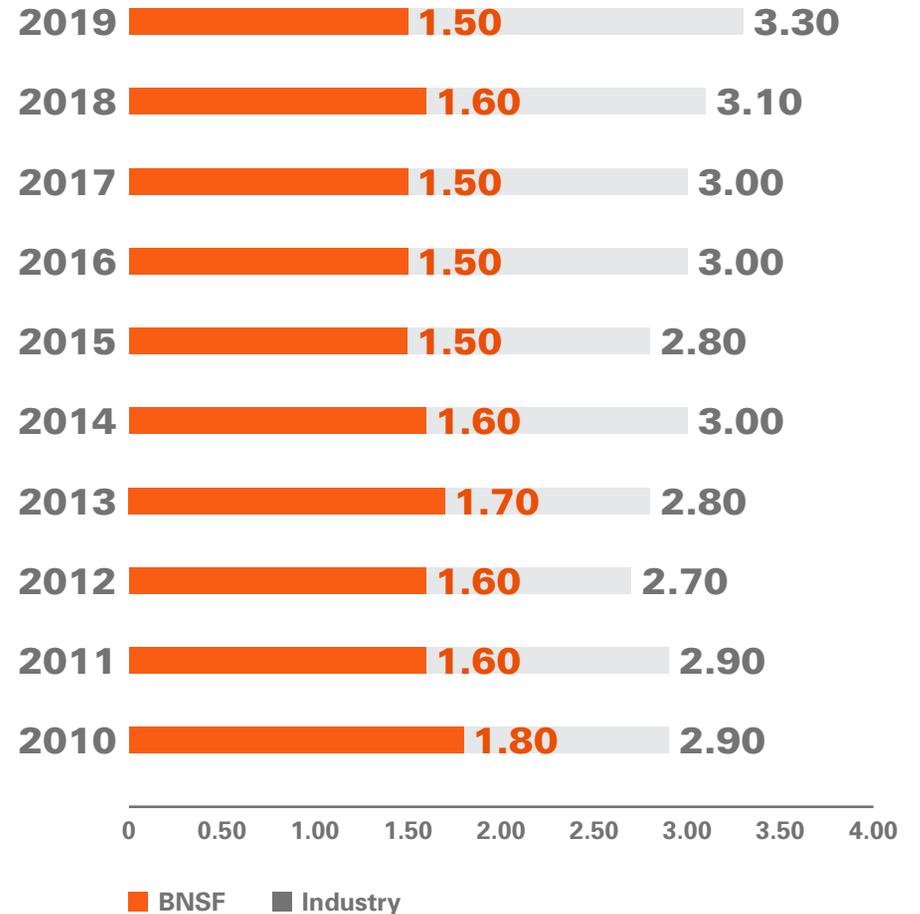
BNSF is committed to improving grade-crossing safety through partnerships, maintaining and upgrading infrastructure and communicating with local stakeholders. Ensuring the highest safety standards for grade crossings—where roadways and railroad tracks intersect—is paramount for keeping the public and local communities safe. Our partnership with [Operation Lifesaver](#)—an independent nonprofit organization—is a key way we improve grade-crossing safety through community education. We also regularly participate in public safety programs such as International Level Crossing Awareness Day to enhance safe railroad crossing awareness in communities across our network.

We understand the risks associated with grade crossings and we are proud to have one of the lowest highway-railroad grade-crossing collision rates in the rail industry. One of the most effective measures in lowering the rate of collisions is to close grade crossings altogether. Since 2000, BNSF has worked with communities and landowners to remove more than 6,400 grade crossings. Read more about our grade-crossing safety efforts [here](#).



# HIGHWAY-RAIL GRADE-CROSSING COLLISIONS

(COLLISIONS/MILLION TRAIN MILES)





## BNSF Global Driver Training Program

In 2018, we launched the BNSF *Driver Direct Training Program*, a defensive driving course aimed at improving driver safety for the more than 8,000 employees who drive BNSF-owned or rented vehicles. Roughly 5,200 people attended the sessions online and 3,200 attended in-person sessions, all led by 145 certified BNSF employee trainers. The training covered safe driving topics such as:

- Distracted driving
- Fatigued driving
- Nighttime driving hazards and best practices
- Analysis of real-life driving situations

The course consists of two hours of classroom instruction followed by five hours of field driving, with trainers providing individualized coaching to drivers as needed. Today, we require all employees who drive a BNSF-owned or rented vehicle to complete the *Driver Direct Training Program* biennially.

## Recognizing & Celebrating Safety

BNSF recognizes and celebrates our employees' safety achievements through our Safety Employees of the Year and our Safety Bell Awards. Recognizing and celebrating safety achievements both reinforce and strengthen BNSF's safety culture and vision.

Safety Employees of the Year recognizes employees who demonstrate exceptional effort in driving BNSF's safety culture by leading safety programs that promote innovative safety ideas, proactively identify risks and reinforce safety behaviors with positive feedback.

Our Safety Bell Awards recognize the teams that achieve the lowest reportable injury-frequency ratios. Read more about safety recognition in our [2019 Annual Review](#).

KEEPING OUR ECONOMY MOVING **THIS IS BNSF.**

# GROWTH & CAPABILITY

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BNSF plays a vital role in our economy by keeping freight moving across our country. As the world and supply chains continue to change and evolve, BNSF is prepared to meet the needs of our customers, employees and communities by providing the most sustainable mode of land-based freight transportation.



# GROWTH & CAPABILITY

Rail is an essential component of our economy's supply chain, and BNSF plays an important role in moving freight across our nation every day. Our customers ship consumer, industrial, agricultural and energy products. And since rail is the most environmentally friendly mode of land transportation, the more freight we take off the road, the lower the impact is on the environment.

## WHAT WE CARRIED IN 2019

# 10,221

Year-Over-Year (Y/Y) Change **-4.5%**  
(Thousands of Units, With Y/Y Change)



## 5,342

Consumer Products  
(Y/Y Change: -4.6%)



## 1,931

Industrial Products  
(Y/Y Change: -3.0%)



## 1,146

Agricultural Products  
(Y/Y Change: -5.1%)



## 1,802

Coal Products  
(Y/Y Change: -5.3%)



## Supporting Customer Growth

From expanding facilities to offering new services to collaborating on unique solutions, our focus at BNSF is always on finding ways to serve our customers reliably and consistently. To support our growth and the growth of our customers, we invested \$3.6 billion during 2019 in core network and related asset maintenance and replacement; locomotive, freight car and other equipment acquisitions; and expansion and efficiency projects. These capital investments resulted in a number of infrastructure upgrades.

In addition to our own investments, customers and local economic development organizations showed their confidence in our ability to help them succeed by collectively investing approximately \$1.2 billion to establish or expand facilities directly served by rail.

Our reinvestment in our network, combined with investments by our customers and local economic development organizations, help to create jobs, generate tax revenues and ultimately support the prosperity and wellbeing of communities surrounding our operations.

While reinvesting in our network, we also take steps to reduce environmental impacts, such as recycling materials.

BNSF offers customers a variety of solutions, new technologies and capabilities to help meet their business needs. In the following sections, we underscore how our capabilities and investments position BNSF for sustainable growth, provide value for our customers, build trust with our communities and protect the environment.

### Results of 2019 Capital Investments



**350**

Bridge  
Projects



**~515**

Miles of Rail  
Replacement



**~12K**

Miles of Track  
Resurfacing/  
Undercutting



**2.3M**

Railroad  
Ties  
Replaced



“ Our business model is based on growth, receiving fair value for what we do and reinvesting profits back into our railroad. Critical to this strategy is a solid cost structure that includes a continuous focus on our efficiency and productivity while meeting our customers’ needs with the appropriate capabilities. ”

**JULIE PIGGOTT, EXECUTIVE VICE PRESIDENT & CHIEF FINANCIAL OFFICER**

### Recycling Commitment

BNSF’s recycling efforts further reduce our environmental impact. Materials recycled in 2019 include approximately:



**2.5M**

Railroad Ties



**5.5M**

Gallons of Lube Oil



**0.9M**

Pounds of Batteries



// We are proud to be the leader in intermodal transportation. Our intermodal network provides our customers with the most flexible, reliable, efficient and sustainable form of transportation. //

**TOM WILLIAMS, GROUP VICE PRESIDENT, CONSUMER PRODUCTS**



## Intermodal Service

BNSF is proud to be the leader in intermodal service—and we are committed to offering our customers the right options to meet their needs, now and in the future. Intermodal is the most cost-effective and environmentally efficient mode of transporting freight, creating value for our customers, communities and the environment.

Intermodal shipping also comes with many environmental benefits. Each intermodal train removes the equivalent of several hundred trucks from the road, eliminating congestion and reducing emissions along major highways. Trains are also much more fuel-efficient than trucks overall, moving one ton of freight approximately 500 miles on a single gallon of diesel.

BNSF has 25 intermodal hubs across our network that provide fast, reliable and resilient supply chain solutions to keep the economy moving. Our intermodal freight averages 550 miles of transit per day over our network, comparable to travel distances of single-driver trucks, but with three times greater efficiency. In addition, rail provides supply chain diversification, helping to mitigate the risk of disruptions with a single mode of transportation. Read more about our trains and operational efficiency in the [Efficiency](#) section of this report.

# THE INTERMODAL CYCLE

The term intermodal refers to the movement of freight in containers or trailers using two or more modes of transportation—seamlessly integrating road, rail and water to reduce both costs and environmental footprint. Intermodal plays a critical role in transporting consumer goods from manufacturers to stores, and these goods are essential to everyday life and the vitality of our economy.



Shipments arrive at port in an *international* intermodal container.



It is taken to a transload facility by truck and transferred into a *domestic* intermodal container or is put directly onto our rail network.



**25**  
Intermodal hubs available to customers across our network



**550**  
Miles averaged per day by intermodal trains, comparable to long-haul trucks



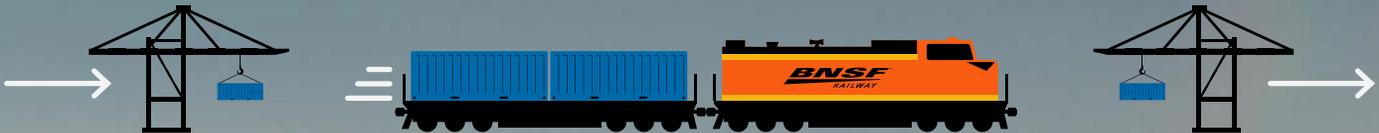
**5M+**  
Containers of everyday products such as household goods



The products arrive at the store or consumers receive the goods directly via our customers' parcel and ground networks.



It is then taken to a distribution center, where the products are unloaded and sorted.



The container is shipped by BNSF to an intermodal facility where it is picked up by truck.





## Domestic Intermodal

BNSF maintains the largest and most advanced domestic intermodal network in the world, combining the speed and flexibility of a truck with the efficiency, capacity and economies of scale provided by a train. Our domestic facilities provide direct access to major distribution centers and warehouses throughout the U.S. To further increase value for our customers, we locate our hubs in key markets to help maximize supply chain efficiencies and speed-to-market for our customers' freight.

We use advanced technology to help truck drivers operate as efficiently as possible throughout our intermodal facilities. This includes several tools to facilitate entry and exit, such as our Automatic Gate Systems (AGS) and [BNSF's RailPASS platform](#), which helps expedite driver identification and integrate shipment details into trucks' onboard computers for a faster, easier experience, which means less idling and fewer emissions. Learn more about our efforts in the [Technology](#) section of this report.

We continue to expand our existing hubs and construct new facilities to meet our customers' growing demand in major markets. To create greater efficiencies and convenience, we offer our customers co-location opportunities near major BNSF hubs. We discuss these opportunities in more detail in the sections that follow.

## International Intermodal

BNSF's network connects with the major West Coast ports of the United States, the largest gateway between Asia and North America. Direct access to ports helps our customers minimize their transit times and reduce overall emissions associated with their imported goods. With the flexibility of our extensive rail network and the speed we provide to inland markets, our customers save time and money while reducing their overall carbon footprint. Learn more about our intermodal services [here](#).

## BNSF Carbon Estimator

Carbon reduction plays an increasingly important role in our customers' decision-making processes for freight transportation. Shipping with BNSF can be part of an effective strategy for an organization to achieve significant carbon emissions savings within their supply chain and thereby reduce their carbon footprint.

We are working hard to help our customers quantify the environmental benefits of rail compared with long-haul trucking as they look for ways to better understand and reduce their supply chain impacts. We have a tool to aid our customers in estimating the carbon footprint for their BNSF shipments. Potential customers can also use the estimator tool to calculate the reduction of their carbon footprint when they incorporate BNSF into their transportation portfolio.

The estimator output provides customers with:



**RAIL CARBON FOOTPRINT**



**ESTIMATED CARBON REDUCTION (%)**



**LONG-HAUL TRUCK CARBON FOOTPRINT**

To start your calculation, visit the [BNSF Carbon Estimator](#). 

## BNSF Logistics Parks, Logistics Centers & Certified Sites

BNSF operates three Logistics Parks that leverage the strengths of our national network to provide our customers with comprehensive, efficient and sustainable freight solutions. Logistics Parks bring together warehousing and distribution center operations to connect manufacturers and retailers closer to their markets. We strategically locate our Logistics Parks near BNSF intermodal hubs in major U.S. consumer centers and anchor neighboring distribution centers to these facilities. This allows us to partner with trucking companies and ocean carriers to provide streamlined supply chain solutions that connect manufacturers and retailers to their markets in the most efficient way possible.

By co-locating their distribution center to a neighboring BNSF logistics facility, our customers reduce the number of truck miles driven, driving down their greenhouse gas (GHG) emissions. The added ease of access to intermodal rail transport increases our customers' speed and efficiency in moving freight from overseas markets into mainland U.S. In addition, BNSF collaborates with local communities on the management and new construction of Logistics Parks to understand the needs and expectations of these communities while also reducing environmental and social impacts and helping support economies with jobs and livelihoods. To learn more about BNSF's Logistics Parks, visit our [website](#).





“ Our development efforts continue to focus on providing our customers with reliable, efficient and turnkey services while also creating jobs and tax revenue in local communities and generating long-term value for BNSF. We recognize the importance of creating growth opportunities for both our customers and our business by making investments at and around our properties. ”

**COLBY TANNER, ASSISTANT VICE PRESIDENT,  
ECONOMIC DEVELOPMENT & REAL ESTATE**

Logistics Centers are multi-customer, multi-commodity business parks that offer direct rail in underserved markets. These centers mean more choices, flexibility and efficiency for our customers. These centers, created in partnership with our customers, streamline service and supply chains to enable rapid growth, save significant development time, increase speed-to-market and provide reliable and cost-effective services. Logistics Centers are also highly efficient, which reduces emissions and environmental impact and generates sustainable value for everyone involved. Learn more about our Logistics Centers on our [website](#).

BNSF Certified Sites reduce the entry barriers for our customers to gain access to rail-served sites and benefit from their efficiencies. Certified Sites are areas of land adjacent to our network ready-made for customer development. BNSF identifies real estate that could be readily connected to BNSF’s network and studies environmental and social factors—such as

wetland inventories and community outreach—to minimize potential impacts that could delay or stop a development project. Once a site is studied, it is certified and ready for development. BNSF’s certified site process streamlines customers’ development processes and ensures BNSF can operate with the utmost safety and efficiency as well as the least amount of environmental impact. Currently, BNSF has 24 Certified Sites available and ready for development. Learn more about our Certified Sites [here](#).

Looking ahead, we will continue to look for opportunities to expand our network into new markets when and where it makes sense. As we do so, BNSF will evolve our capabilities to create the speed, capacity and flexibility required to meet the needs of our customers and communities. We remain committed to improving the customer experience while increasing efficiency through capital investments and advanced technologies that ensure we transport our customers’ cargo as safely, reliably and efficiently as possible.



## Advancing Our Operations

At BNSF, we are always looking for ways to advance technology in our operations to improve safety, reduce environmental impact and add value for our customers. See the [Technology](#) and [Efficiency](#) sections of this report to learn more about how we leverage technology to advance our operations. Also, learn more about how BNSF is integrating new technologies into our facilities in our [2019 Annual Review](#).

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# EFFICIENCY

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BNSF helps get consumer goods to store shelves, moves grain that becomes the food we eat and transports energy resources that heat and cool the homes and offices where we live and work. With each of these moves, the environmental impacts of the commodities we transport are reduced thanks to rail's efficiency. Building on this efficiency contributes to lowering carbon emissions, decreasing environmental impacts, enhancing safety and lowering transportation costs for us and our customers.



# EFFICIENCY

## Moving Our Economy Efficiently

By its very nature, rail is the most fuel- and resource-efficient land transportation method available for moving goods long distances. At BNSF, we constantly strive to increase the efficiency of our network to support the economy, and that is why efficiency is a core value and such an integral part of our identity.

The inherent efficiencies of rail generate value for our customers and communities by reducing transportation emissions and carbon footprint, increasing safety for local communities and driving growth and economic value for our customers. Continuously working to increase the efficiency of our trains also improves our cost structure and maintains our competitive advantage in the marketplace.

Four key factors contribute to making rail more inherently efficient than any other form of land transportation. We build upon these inherent efficiencies by adopting new technology, implementing and improving work practices and enhancing the efficiency of our trains.

- **Energy-Efficient Engines:** Diesel electric locomotives—a string of locomotives pulling a train that use a combination of diesel combustion engines and electric traction motors—decrease fuel use.
- **Reduced Rolling Friction:** Trains' steel wheels running on steel tracks create less rolling resistance than other forms of land transportation.
- **Dedicated Right of Ways:** Allow trains to move continuously without frequent stops, increasing fuel efficiency and reducing emissions.

- **Horsepower per Ton Optimization:** BNSF optimizes the number of locomotives on each train based on the weight of the trailing freight, reducing unnecessary horsepower to improve the fuel efficiency of each train.

At BNSF, our business model has always been to grow and drive productivity gains while receiving appropriate value for what we do and invest those returns back into the railroad to support further growth. Key to this growth cycle is greater efficiency and productivity, which allow us to improve our cost structure and reinvest further in efficiency. Over the past decade, thanks to the commitment of our employees as well as significant technology investments, BNSF has made significant strides in efficiency and productivity, allowing us to continue this virtuous cycle.



// We take great pride in moving the economy efficiently and safely. Increasing the efficiency of our network provides a win for all of our stakeholders. Increased efficiency lowers emissions, decreases costs and increases the reliability and safety of our network. Our long-term vision is to sustainably and efficiently move freight and our economy forward. //

JOHN LOVENBURG, VICE PRESIDENT, ENVIRONMENTAL



**32.8M**

Metric tons of total customer carbon emissions reductions by shipping with BNSF in 2019

## Creating a More Efficient Fleet

Locomotive technology has been essential to improving our network fuel efficiency—94% of BNSF’s emissions come from our locomotives. As such, we have made a significant investment in three key areas of locomotive technology: new locomotives, Automatic Engine Start/Stop (AESS) systems and Energy Management Systems (EMS).

BNSF is proud to have the largest number of the newest and cleanest-burning locomotives in North America. Since 2005, BNSF has purchased more than 3,600 new locomotives, including more than 500 locomotives since Tier 4 Environmental Protection Agency (EPA) standards took effect in 2015. BNSF has also equipped more than 3,500 locomotives with EMS, which allows throttles and dynamic brakes to be controlled automatically, similar to cruise control in an automobile.

EMS factors in the train makeup (length, weight and horsepower, track geometry, grade, curvature) and speed restrictions to determine the most fuel-efficient way to operate the train across the territory while maintaining appropriate train handling. Additionally, we are integrating EMS with Positive Train Control (PTC) to maximize the utilization of EMS and minimize fuel consumption. Read more about how BNSF is using PTC to increase safety and efficiency in the [Technology](#) section of this report.

## Horsepower per Ton Optimization

Reducing horsepower per trailing ton (HPT) is one of the most effective methods to improve fuel efficiency. We have implemented a number of practices to minimize HPT by reducing excess horsepower; implementing speed-based throttle limiting, which reduces fuel consumption at higher speeds; and isolating—or potentially shutting down—engines when a train has more locomotives than it needs for a given segment of its route. These initiatives, which rely on the efforts of individuals across the entire BNSF network, result in a significant operating cost reduction and a reduction in BNSF’s environmental footprint through decreased carbon emissions.

BNSF also has specific internal compliance goals for throttle limiting, locomotive isolation and EMS utilization, which help create consistency across our network. Compliance with these internal goals helps local supervisors identify where they have opportunities to make adjustments and raise awareness to improve compliance, ultimately increasing fuel efficiency.

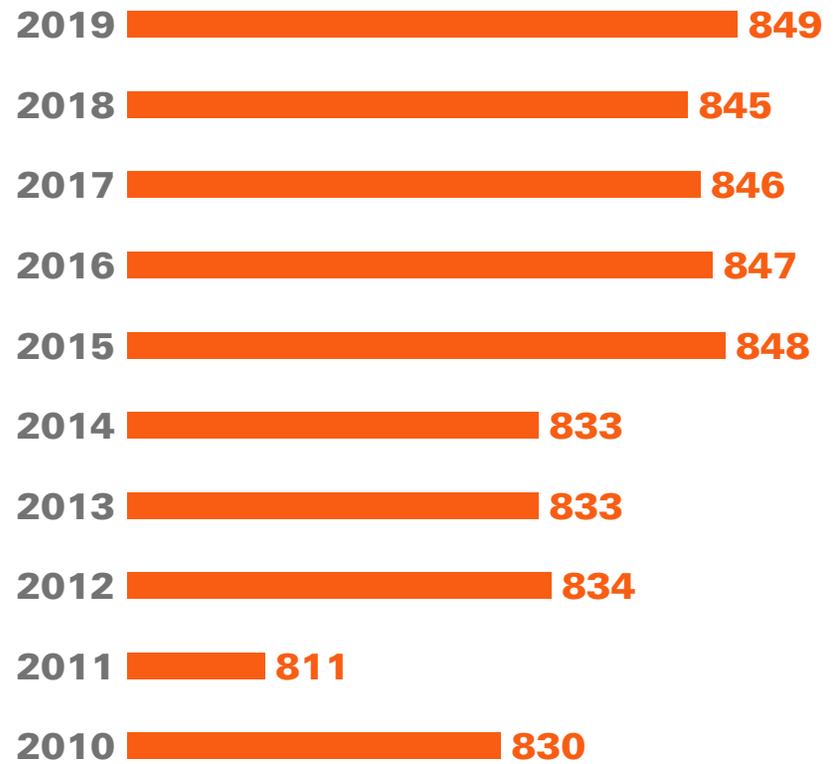


“ We have done a lot of work to effectively communicate to employees the fuel-efficiency benefits of reducing horsepower per ton. BNSF’s fuel efficiency and cost competitiveness are necessary to remain a viable railroad for the future. We are working every day to educate our employees about how they contribute to BNSF’s sustainable future. ”

**ALEC VINCENT, ASSISTANT VICE PRESIDENT,  
FUEL MANAGEMENT & STRATEGIC SOURCING**

## FUEL EFFICIENCY

(GROSS TON-MILES/GALLON OF DIESEL FUEL)



800 810 820 830 840 850 860



## Energy Management Systems Software

BNSF locomotives utilize Trip Optimizer, an EMS software that factors key metrics—such as train length, number and types of locomotives used and track conditions—to help maximize a train’s fuel economy. Whenever certain predetermined conditions are met, Trip Optimizer activates an auto-control setting allowing the train to operate at enhanced efficiency, saving fuel and creating significant emissions reductions. BNSF measures the effectiveness of Trip Optimizer throughout our fleet to improve the technology and understand best practices for using the system. Since integrating Trip Optimizer across our fleet, in 2019 we experienced our best year yet, seeing the biggest increases in efficiency associated with the system.

## Integrating Positive Train Control & Trip Optimizer

BNSF is proud to lead the North American freight rail industry in the implementation of Positive Train Control (PTC) technology, having invested approximately \$2 billion through the end of 2019. Our PTC infrastructure currently covers approximately 11,500 route miles, 80% of our total freight volume and more than 5,000 PTC-enabled locomotives.

By integrating PTC with Trip Optimizer, we are achieving even greater fuel-efficiency benefits. Today, our locomotives equipped with both these technologies send real-time signaling data from PTC through the Trip Optimizer software to automatically adjust speed to meet current network conditions. The combination of these tools improves our network fluidity, efficiency and resiliency, while also helping our operations remain cost-competitive. Read more about how BNSF is using PTC to increase safety and efficiency in the [Technology](#) section of this report.

## Automatic Engine Start/Stop

Automatic Engine Stop/Start (AESS) is a fuel-saving system with which we have equipped most of our locomotives. AESS will automatically shut down a locomotive that is idling in order to minimize wasted fuel and eliminate unnecessary emissions while the locomotive is not pulling freight. The AESS will then automatically restart the locomotive if it is needed for power or if it is necessary for the health of the engine. Currently, more than 99% of our active locomotive fleet is equipped with AESS.

## Preventative Maintenance & Wayside Detectors

Preventative maintenance helps ensure our operations run as safely and efficiently as possible. For instance, BNSF works closely with the original equipment manufacturers (OEMs) of our locomotives to assist with optimizing the repair and replacement cycle of our purchased locomotive parts and overhauling units within our long-haul fleet. Our OEMs help us anticipate when preventative maintenance should occur throughout our locomotives’ lifecycles.

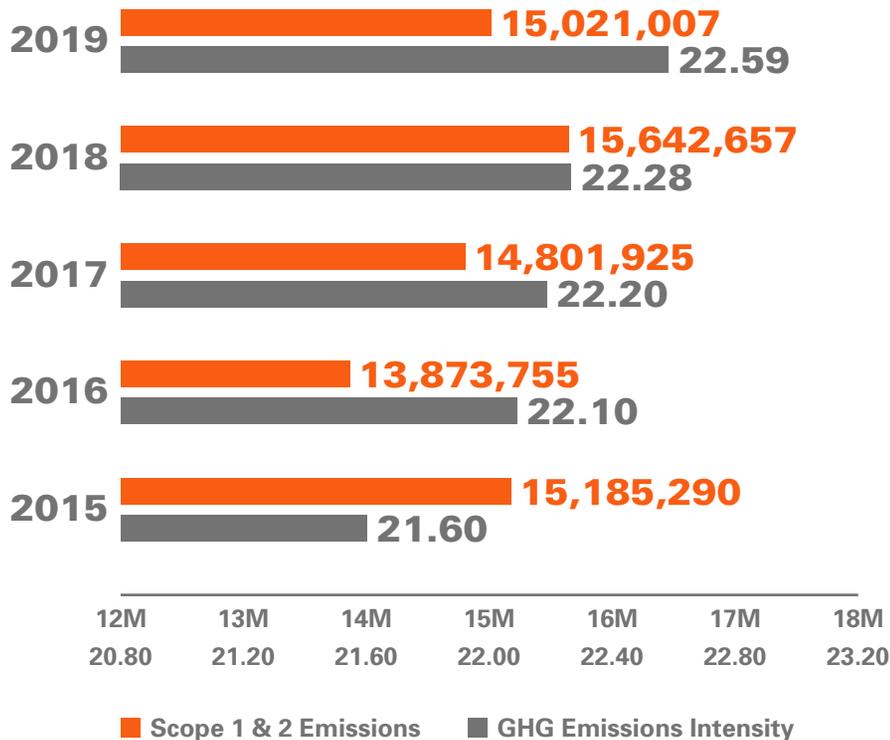
For many years, BNSF has leveraged our wayside health monitoring system to increase safety, mitigate potential service interruptions and improve asset utilization. These wayside detectors, driven by artificial intelligence, use Big Data—vast amounts of data sets analyzed by computers—to evaluate the health of passing trains, identifying conditions otherwise undetectable to the human eye. When the wayside system identifies a defective component, it automatically routes alerts to maintenance locations while more serious alerts are sent to our 24/7 operations center. Using this early detection to address emerging issues has driven down the number of incidents across our fleet. Through the end of 2019, BNSF had approximately 4,000 wayside detectors across the network. Read more on how BNSF is leveraging artificial intelligence to create a safer and smarter railroad in [Rail Talk](#).

## Emissions & Our Carbon Footprint

Rail is the most environmentally efficient mode of land-based transportation, moving freight more than three times as far as trucks per gallon of fuel and lowering greenhouse gas (GHG) emissions by more than two-thirds. By managing fuel efficiency, BNSF reduces our environmental impacts while contributing to our customers' carbon footprint management.

# TOTAL SCOPE 1 & 2 EMISSIONS & GHG EMISSIONS INTENSITY

(METRIC TONS OF CO<sub>2</sub>e & METRICS TONS OF CO<sub>2</sub>e/MILLION REVENUE TON MILE (RTM))



Enhancing locomotive fuel efficiency is the foundation of BNSF's carbon strategy and managing fuel use enables us to manage costs, thereby allowing us to reinvest in our network and continue to grow. BNSF's carbon strategy centers on three core tenets:

- Providing customers a low-carbon option compared with long-haul trucks
- Continuing to improve locomotive fuel efficiency and operational efficiency to meet our customers' needs and on-time performance
- Investing in capital improvements, such as locomotives and yard equipment, that positively impact the environment and our communities

To reduce our carbon footprint, we strategically implement fuel-efficiency initiatives and increasingly use more renewable and biodiesel fuel. We are also investing in future transformative technology to increase efficiency and reduce GHG emissions. Read more in the [Technology](#) section of this report.

Shipping with BNSF enabled our customers to reduce their total carbon emissions by 32.8 million metric tons versus shipping by trucks alone. This carbon savings is equivalent to:



**6.9M+**  
Vehicles Annually



**42.8M+**  
Acres of CO<sub>2</sub> Sequestration  
by U.S. Forests in One Year

Source: U.S. EPA's Greenhouse Gas Equivalencies Calculator

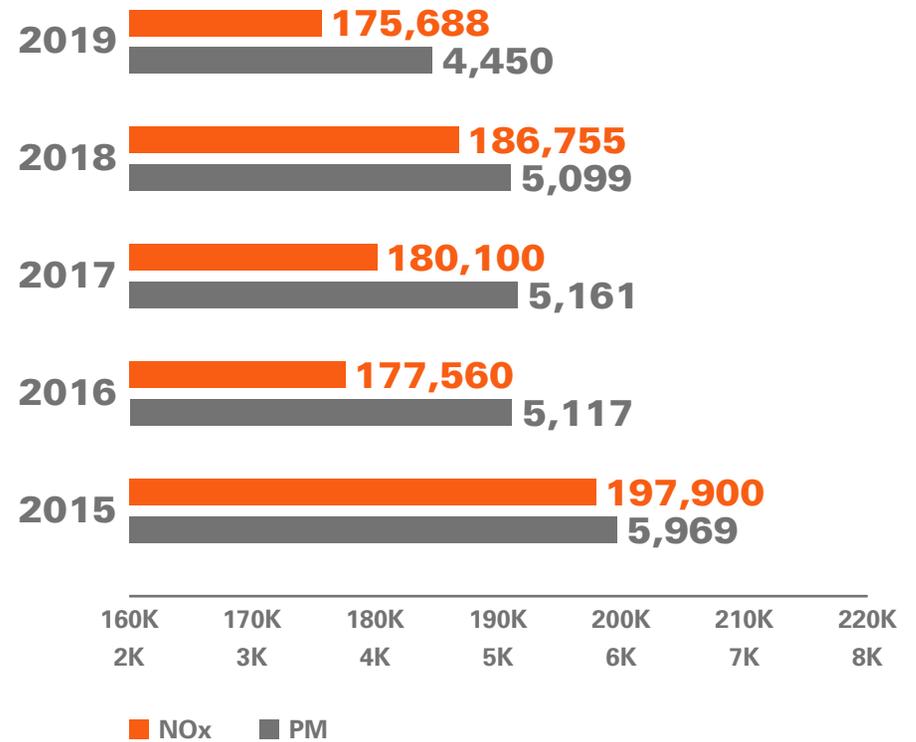


## Air Emissions

Managing and reducing our air emissions help BNSF mitigate our environmental impact in the communities in which we operate. Through advances in technology and locomotive upgrades, BNSF significantly reduced our fleet's average emission rate of nitrogen oxides (NOx) and particulate matter (PM) over the past decade. From 2015 through 2019, our NOx and PM emissions decreased by more than 11% and 25%, respectively.

## AIR EMISSIONS TRENDS

(TONS)



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# TECHNOLOGY

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At BNSF, we pursue technologies that enhance our ability to continually operate a safe and efficient railroad. We recognize that exploring and investing in the technologies of the future are critical for us to meet the needs of our customers, employees, communities and the environment.



# TECHNOLOGY

At BNSF, we do not pursue technology for technology's sake. We look for potential use cases that will help us leverage technology to enhance our ability to continually meet the needs of our customers and operate a safe and efficient railroad. In the following section, we highlight some of the ways BNSF is integrating emerging technologies at our intermodal facilities, in our fleet and throughout our network to create a more sustainable freight system.

## Utilizing Technology at Intermodal Facilities

At BNSF's hubs and Logistics Parks, where trucks and trains interface for our intermodal operations, we have implemented and are piloting several technologies to help us improve safety, enhance capabilities and increase efficiency.

For example, in 2007, BNSF was the first U.S. railroad to use **wide-span electric cranes** at our intermodal facilities. These cranes produce zero emissions on-site and significantly reduce the number of diesel-powered hostlers—container-moving trucks within BNSF's facilities—needed due to increased efficiency from a wider range of motion. By reducing the number of trucks and machines moving containers within our intermodal yards, these cranes increase employee safety and reduce on-site emissions, protecting air quality for our communities and reducing our carbon footprint. Today, we operate 26 electric wide-span cranes at our intermodal facilities and continue to expand our use of this cleaner, more efficient technology.

At the end of 2019, we also introduced remote wide-span crane operations at Logistics Park Chicago. This technology greatly enhances safety and efficiency by allowing one crane operator to control more than one crane from a workstation that is away from the active operational footprint.

Furthermore, we completed the transition from manual to automated yard checks at our Alliance Intermodal Facility in the Dallas-Fort Worth area. Deploying image analytics and machine learning, we are able to keep track of our yard inventory in a much more efficient way, yielding significant improvements in cost, time and fuel consumption. More information on automated yard checks can be found in our [2019 Annual Review](#).





Another technology we are testing is automated straddle carriers—or autostrads—at our Logistics Park Kansas City (LPKC) Intermodal Facility. Two autostrads are now being used at LPKC to safely and effectively load and unload freight and organize stacks of containers. We are the first railroad in the world to use autostrads that carry containers larger than 40 feet and the first U.S. rail carrier to implement this technology at an inland intermodal facility. The autostrads module at LPKC moved from the pilot phase to regular use in production in 2020. Read more about our autostrads in [Rail Talk](#).

An additional use of technology in our intermodal operations is automated gate systems (AGS) at our busiest facilities that help reduce truck idling time and emissions. BNSF pioneered AGS technology for inland intermodal hubs back in 2007. Today, approximately 90% of the freight

that comes through BNSF’s intermodal facilities goes through an automated gate. When used in conjunction with BNSF’s RailPASS mobile app, drivers can pass through the AGS in as little as 30 seconds, cutting each gate transaction time in half and making it easier and faster for trucks to move freight in and out of our facilities. About half of our intermodal transactions utilize both AGS and RailPASS. Learn more about our AGS and RailPass in [Rail Talk](#).

We are also currently testing a variety of next-generation, electric-powered, cargo-handling equipment in California at our San Bernardino, Hobart and Stockton intermodal facilities. Electric cargo-handling equipment operates much quieter and cleaner than our traditional diesel machines, contributing to a safer and more comfortable work environment while reducing impacts on surrounding communities.

## Battery-Electric Locomotives

BNSF is leading the rail industry by partnering in the development of the next generation of locomotives. In 2018, the California Air Resource Board awarded BNSF and the San Joaquin Valley Air Pollution Control District a \$22.6 million grant to develop a battery-electric locomotive. We are currently developing a prototype 100% battery-electric locomotive in collaboration with locomotive manufacturer, Wabtec. When placed in a consist of Tier 4 locomotives, the set performs like a hybrid vehicle.

The initial battery-electric locomotive testing will occur between Stockton and Barstow, California, in early 2021. Once charged in Stockton, the locomotive will store additional energy through dynamic braking, meaning that kinetic energy captured while braking will recharge the locomotive’s batteries.

While on the main line, the use of the battery-electric locomotive will be optimized to maximize fuel efficiency. Another aspect of the testing will review how the battery power can be utilized to perform in-yard train movements. BNSF expects that even when running with diesel locomotives in a consist, the battery-electric locomotive will significantly improve fuel economy and reduce the environmental impact from emissions.

BNSF will continue to study the benefits of battery-electric locomotives as we aim to further improve fuel efficiency and reduce our carbon footprint across our network. Read more about the battery-electric locomotive in [Rail Talk](#) and our [2019 Annual Review](#).

## Advanced Unmanned Aircraft Systems Operations

BNSF continues to be the leader in the rail industry when it comes to the use of Unmanned Aircraft Systems (UAS). We utilize our UAS technology in a variety of ways, including to assist in addressing disruptions to our rail traffic, called service interruptions.

In 2019, historic flooding in the Midwest caused widespread washouts across BNSF's rail network, making physical inspections on foot impossible in some areas. We deployed UAS to quickly assess the scope and severity of the damage, which allowed our employees to conduct aerial inspections of our line up to two miles away. These aerial inspections provided information on track and flooding conditions while keeping our employees out of harm's way.

The UAS team has also supported recovery efforts following mudslides and avalanches in other areas of our network using UAS to make similar damage assessments while maintaining a safe distance from hazards. Additionally, we use our UAS to improve the speed and safety in conducting routine maintenance inspections of our locomotives and rail cars. Read more about our use of UAS in [Rail Talk](#).



## Advanced Sensing & Operational Technology

Multiple artificial intelligence (AI) techniques are coming into regular use at BNSF. One of the latest additions to our detection technologies is Machine Vision Systems (MVS), a branch of AI in which computers scan millions of digital images to identify defects and irregularities. BNSF employs MVS to detect certain types of emerging defects in rolling stock and track. For example, the MVS across our network currently captures more than 750,000 wheel images per day, which we analyze to detect possible problems.

Images flagged by MVS that possibly contain a defective condition are referred to specially trained BNSF employees for confirmation in real time, 24/7. When a defect is confirmed, corrective action is initiated to prevent worsening of the defect, followed by repair. Leveraging AI streamlines corrective actions, allowing us to quickly identify latent or unseen defects and repair them promptly.

This technology improves both the safety and fluidity of our network, which ultimately enables us to efficiently transport the goods our customers and communities rely upon to keep the economy moving.

In addition to MVS, BNSF employs multiple mature and emerging technologies to ensure the safety of track and rolling stock. Our wayside health monitoring system scans our cars and other key equipment and provides data on signs of wear. Sensors throughout the BNSF network read the temperature, acoustic signature, wheel profile and wheel-impact force of rolling stock.

We also use manned and unmanned track geometry cars as well as internal rail flaw-detection vehicles that continuously run across our network, taking measurements using lasers, ultrasonic beams and ground-penetrating radar to ensure the alignment and soundness of the track structure. Read more about how we leverage AI in [Rail Talk](#).

## Positive Train Control

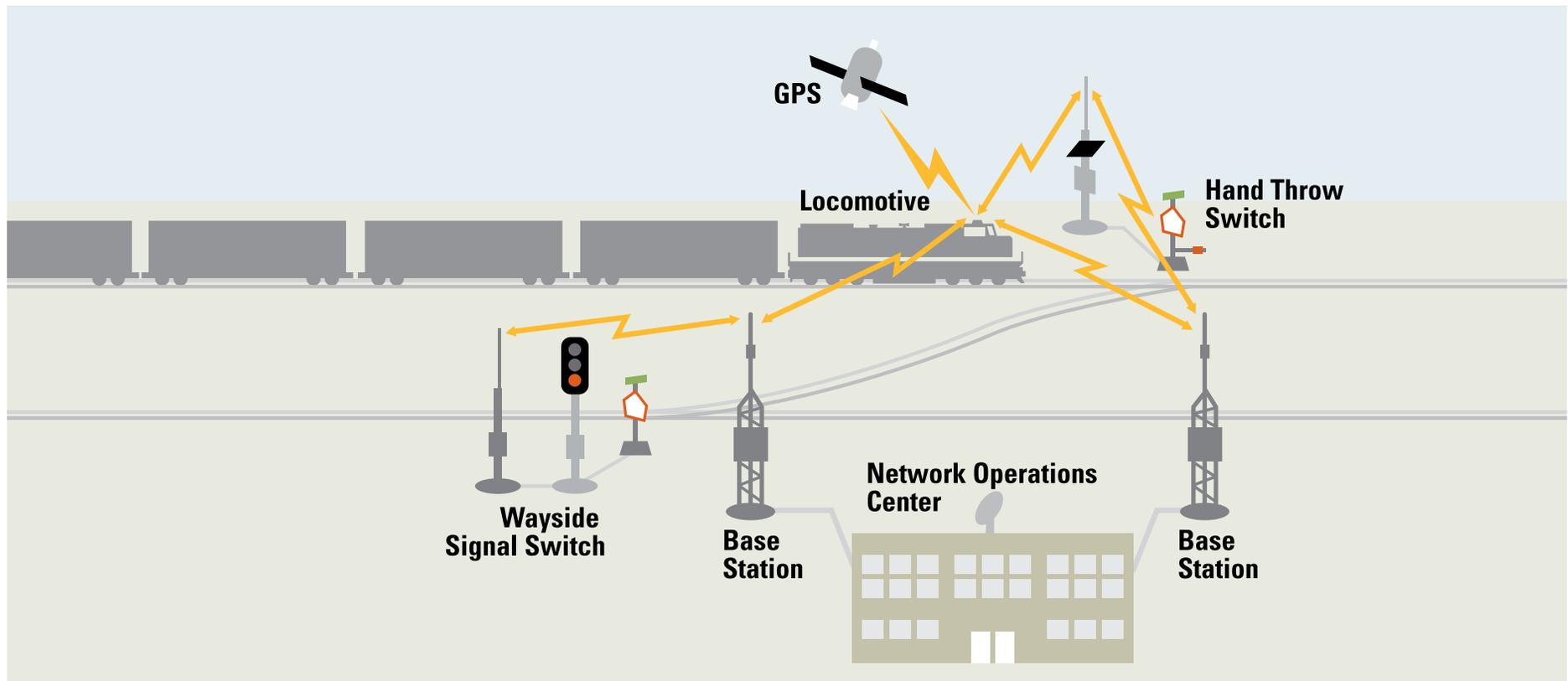
Another technological safety enhancement is Positive Train Control (PTC)—a system that monitors the position and speed of trains to prevent collisions and derailments.

BNSF was the first Class I railroad to complete installation of the federally required PTC equipment on our network. This includes 5,000 equipped locomotives, more than 11,500 route miles covered, 6,000 radio towers installed and 21,000 employees trained to operate and maintain trains and equipment.

PTC is a good example for how BNSF, other railroads and the Federal Railroad Administration (FRA) collaborate to increase safety industrywide through the application of technology. To realize the full benefits of PTC, the systems of multiple Class I rail networks must be seamlessly interoperable. This means that a BNSF PTC-equipped train can communicate with another railroad's PTC system when traveling on tracks outside of our network. BNSF will continue to work with the FRA and other railroads to expand interoperability and ensure PTC enhances rail safety wherever employed.

# 21K

Employees trained to operate and maintain PTC trains and equipment



## Analytics & Information Technology

We are pursuing AI in an effort to continuously improve safety, asset utilization, service and operational efficiency. Multiple AI techniques are coming into regular use at BNSF. In addition to MVS, BNSF has employed AI-based statistical analysis and machine-learning techniques to monitor rolling stock and track health. When we leverage AI to predict end of life for some track components, such as rail curves and switches, we can proactively replace them before they fail or create risk. Some other ways we are leveraging AI include:

- **Engineering:** Helping us develop a comprehensive surfacing plan where our AI models are learning from our engineering experts on how we would prioritize track maintenance.
- **Mechanical Detectors:** Developing warm-bearing predictions so we can replace wheel bearings before they become an issue.
- **Computer Vision:** Doing automated yard checks at our intermodal hubs and utilizing vision-based detectors to help us identify cracked wheels, cracked joint bars and broken rail.
- **Customer Experience:** Launching tools to provide our customers with quick, digestible information.

- **Digital Capabilities for Our Workforce:** Delivering mobile devices and digital information to our crew members so they can operate safely and efficiently.
- **Organizational Capabilities:** Building on our organizational capabilities by dedicating data scientists to machine learning and computer vision as well as looking at how to better leverage AI through cloud-based solutions and open source tools.



“ Whenever we pilot or implement new technology, the first thing we address is safety and the second thing we address is asset utilization and efficiency. Advanced analytics and artificial technology (AI) are going to give us the next-step changes in making our operations safer and more efficient. ”

**MURU MURUGAPPAN, VICE PRESIDENT,  
TECHNOLOGY SERVICES & CHIEF INFORMATION OFFICER**

## Evaluating New Technologies

BNSF continually investigates new technologies, with an eye toward improving efficiency and safety. Going forward, we will continue to evaluate and implement emissions-reducing technologies and other opportunities with the potential to enhance our operations to better serve the transportation needs of our customers as well as reduce our impact to the environment and the communities located near our operations.



KEEPING OUR ECONOMY MOVING **THIS IS BNSF.**

# PEOPLE

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Our people are key to BNSF's continued success, and working together we will realize our tremendous potential. Every day our team members remain focused on operating an even safer and more efficient railroad, consistently serving our customers, building strong relationships with the communities in which we operate and minimizing our impact on the environment.



# PEOPLE

At BNSF, our people are the foundation of our success. Every day thousands of men and women across our company work tirelessly to move the goods that people across our country need. As railroaders, we know that whether it's food, the chlorine needed to keep our water supplies safe, essential consumer products or energy sources needed to produce electricity, our work is never done. We are confident in team BNSF because we know that by working together we can accomplish anything.

We are optimistic about what is ahead for our company because of the unique experiences and skills each of our employees brings across all levels and areas of our organization. We strive to engage our employees in pursuit of developing the company's next generation of leaders and to nurture a company culture where every employee feels accepted and belongs.



**// BNSF is committed to a culture where all employees belong and have equal opportunity to achieve their full potential. We will provide a safe, respectful and inclusive environment that promotes acceptance and belonging for all employees. We empower our employees to be their authentic selves in our workplace. //**

**JUDY CARTER, VICE PRESIDENT & CHIEF HUMAN RESOURCES OFFICER**

We understand the value a diverse workforce brings to our success. We also recognize that significant advancements in technology and evolving customer expectations will require us to bring new skills to our employees and acquire new talent. Taken together, we know that the success of our employees means success for our business, customers, communities and the environment.

## Diversity & Inclusion

At BNSF, we continually challenge the status quo. And while we have come a long way in our diversity journey, we know that we have the opportunity to make more progress and have room for improvement. The success of our journey requires every employee to value the differences we each bring to the workplace. We believe that intentionally creating a culture of equality is how we achieve our Vision and realize our tremendous potential as individuals and as a company.

BNSF is committed to the recruitment and advancement of women and minorities in our workforce. In 2019 and 2018, women and minorities comprised 36.8% and 40% of BNSF new hires, respectively. We recognize a diverse and inclusive culture ensures that all our employees feel a part of the BNSF family.

Diversity, equality and inclusion have been core to our shared Vision and Values from BNSF's very inception. Our Value of Equality states that as members of the BNSF community, our employees can expect:

- To be treated with dignity and respect
- To have equal access to tools, resources, training and development opportunities
- To have equal opportunity to achieve their full potential

We believe that all employees should be provided access to the tools and resources they need to succeed and work in an environment that fosters an inclusive and safe workplace where their voices are heard.

We know that we are on a journey of continuous improvement and encourage our employees to raise issues related to inclusion. We view the resulting dialogue as an opportunity to learn and evolve. By embracing and appreciating each other, we enrich our work experience and our lives while building a stronger company.

## Engaging Our Employees

Our diversity councils and business resource groups (BRGs) are one way we advocate for all employees, providing an inclusive, open and collaborative workplace that encourages and supports diverse perspectives in every interaction.

Our BRGs are networks for passionate BNSF employees who are driven to emerge as leaders by offering solutions to workplace problems. BRGs provide a constructive and supportive environment for our team members to use creative approaches to solving business issues in support of BNSF’s strategic priorities. We currently have six active BRGs and are continuously evaluating this program to see where others may be needed. Each of our BRGs offers different engagement and growth opportunities to its members. These BRGs help employees bond over shared experiences while offering support to members, our company and the community.

BRGs also serve as a way for allies to show their support and learn from those with different experiences than their own. Our BRGs include:

- Women’s Network
- Hispanic Leadership Council (HLC)
- Management Trainee Leadership Network (MTLN)
- BNSF Asian American Network (BAAN)
- African American Networking Group (AANG)
- Business Resource Advocating Veterans Engagement (BRAVE)

We are currently in the process of adding BRGs to support working caregivers as well as Native American and LGBTQ+ team members.

## Military Veterans in Our Workforce

BNSF knows that military veterans possess the experience, determination and dependability to make them great teammates. That’s why we have a long legacy as a top employer of military veterans in the U.S. In 2019, we employed more than 7,300 individuals who identify as military veterans—more than 15% of our workforce. We also support reservists by providing them with time off for training and deployment.

## Talent Planning Process

Our talent planning process helps BNSF adapt to a rapidly changing industry by attracting new, highly capable team members while simultaneously developing our current employees with the skills needed to thrive in the future. We focus on developing all of our employees through effective succession planning. We continue to achieve strong results in this area, with 84% of our non-entry-level positions and more than 90% of our top 500 leader positions filled internally. BNSF’s leaders are highly engaged in our talent planning process, and each department hosts annual events focused on employee development.

# EMPLOYEE RETENTION RATE & AVERAGE TENURE

METRIC	2015	2016	2017	2018	2019
Employee Retention Rate (%)	93	92	94	93	93
Average Employee Tenure	13 years	13 years	13 years	12 years	13 years



“ Our strategy is to develop from within—we invest in training and support all of our employees to understand unique talents and position individuals to be our leaders of the future. ”

DEBRA ROSS, ASSISTANT VICE PRESIDENT, TALENT MANAGEMENT

## Training & Development

We strive to provide each of our employees with extensive training and development opportunities throughout their careers. Our training programs evolve over time to adapt to the changing needs of our people across all areas of our business.

BNSF develops many of our company’s senior leaders through our management training program. Evidence of the program’s success is the fact that the majority of BNSF’s senior leadership positions are filled internally.

Through our All Aboard management trainee program, we assign mentors to newly graduated hires. These mentors connect with our new hires in a series of networking events designed to provide them with a smooth transition into the workforce. The program also offers insight into how these new team members can develop their personal leadership abilities and their future careers at BNSF.

## People Leader Training

For nearly 20 years, BNSF’s award-winning People Leader Training (PLT) has equipped our employees to become future leaders. This unique training opportunity within our industry provides approximately 5,400 BNSF leaders and employees with leadership development skills. Held throughout the year, PLT is a series of two-day training sessions to help our team members enhance their skills through insight and training. These sessions help reinforce our company’s culture and pave the way for BNSF to grow and develop our future leaders.

Each year, PLT takes on a specific focus that is relevant and timely to organizational opportunities and challenges. In 2019, PLT aligned with the following three themes:

- **Challenge the Status Quo:** Using curiosity, resourcefulness and a learning mindset to challenge the status quo.
- **Create the Environment:** Encouraging others to challenge the status quo by listening to, understanding and inviting different perspectives.
- **Communicate with Candor:** Challenging others directly and respectfully.

PLT helps us grow and nourish our leadership capabilities while supporting consistent implementation of the BNSF Leadership Model throughout our business.

KEEPING OUR ECONOMY MOVING **THIS IS BNSF.**

# COMMUNITY

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Partnering with the communities in which we operate helps BNSF continue our cycle of sustainable growth. Communities are instrumental to our social license to operate and are essential to enhancing our initiatives to improve safety and reduce our environmental impact. In turn, BNSF provides economic value to communities through the movement of essential goods, along with key projects and partnerships.



# COMMUNITY

We work tirelessly to develop positive relationships that strengthen the communities where we live and work. Through a variety of philanthropic activities and engagement programs, BNSF contributes to the long-term success of the causes in which we believe. Our unwavering commitment to safely delivering goods to the communities we serve helps improve the quality of life for our team members and our neighbors. Additionally, collaboration with our communities can help us develop better plans and reduce environmental impacts.

## BNSF Railway Foundation

The [BNSF Railway Foundation](#) is the primary organization through which we contribute to our communities. The Foundation helps fund a variety of worthy causes, such as community groups, military veterans and student scholarships.

Organizations that receive scholarship support include the United Negro College Fund, Girls Inc., the Hispanic Women's Network of North Texas and the National Association of Asian Americans, among others.

The Foundation also maintains an Employee Matching Gifts Program that matches 100% of every dollar of employee giving contributed by our team members to nonprofit and educational organizations that fall within the program's guidelines. Over the last two years, our employees have generously made more than \$2.4 million in such contributions, matched by the BNSF Foundation. In 2019 and 2018, the BNSF Railway Foundation gave more than \$18 million to local and regional organizations in the communities throughout our network. Recent highlights of BNSF's giving activities are described on the following pages.



“ At BNSF, we see ourselves as partners with our communities. We strive to build and nurture long-lasting relationships and involve their voices in decision-making. In turn, communities contribute to successful development projects that create economic value while also preserving community and environmental wellbeing. ”

**ZAK ANDERSEN, VICE PRESIDENT, CORPORATE RELATIONS  
& PRESIDENT, BNSF RAILWAY FOUNDATION**

## Supporting Military Veterans

Supporting our veterans and their families is a cause close to our hearts. Since 2014, BNSF has sponsored the Big Red Challenge, an annual obstacle course race held in Lincoln, Nebraska. The race brings together nearly 1,000 active military members, veterans and civilians who wish to challenge themselves with the seven-kilometer obstacle course designed to simulate actual combat skills. Proceeds from the event help our veterans achieve smooth transitions from active duty back to civilian life. Read more about the Big Red Challenge and BNSF's contributions in [Rail Talk](#).

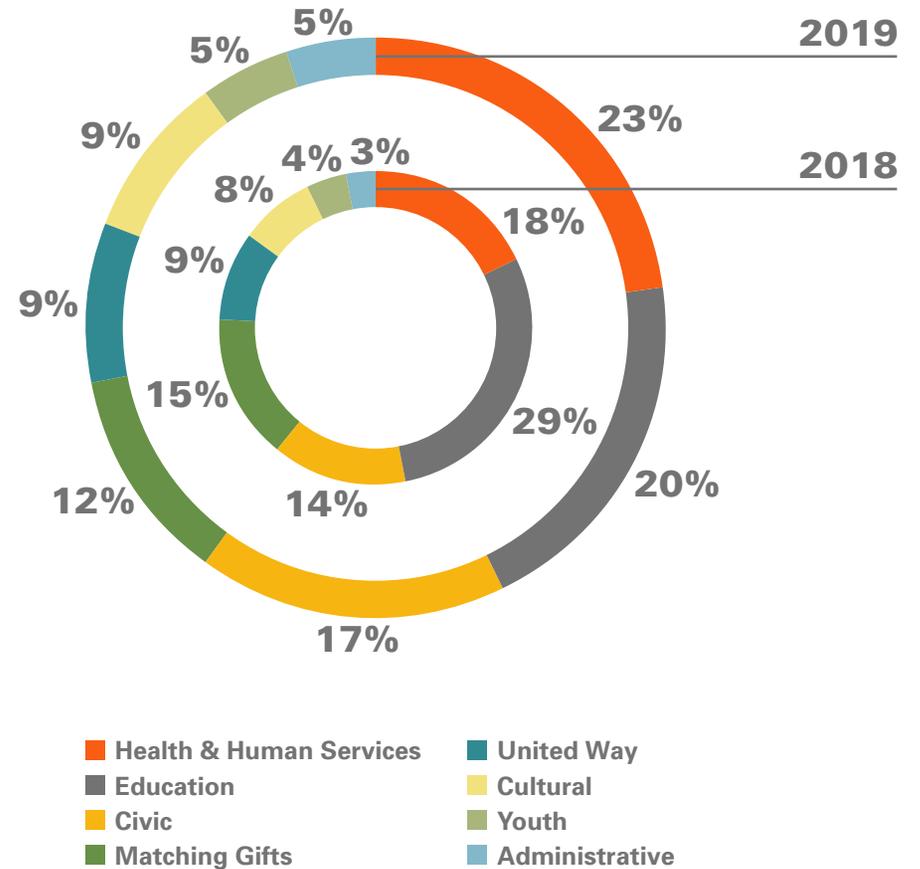
## First Responder Express

BNSF's [First Responder Express](#) recognizes police officers, firefighters, other first responders and their families living near our network, and provides a day of fun out on the rails. In 2018 and 2019, this special train made stops in Galveston and Houston, Texas; Oklahoma City and Tulsa, Oklahoma; Spokane, Washington; and Topeka, Kansas. At each stop, the BNSF Railway Foundation awards grants to local organizations that support first responders and their families.

## Holiday-Themed Trains

During the holiday season, we have a tradition of operating special themed trains across our network using restored passenger cars. For example, we have hosted more than 30,000 military personnel and their families over the last 12 years on the [BNSF Holiday Express](#), a train ride that honors the heroism of our troops. Since the Holiday Express began in 2008, the BNSF Railway Foundation has given more than \$800,000 at these events for local charities that support military families.

# 2018/2019 DISTRIBUTION OF CHARITABLE GIVING



## Strengthening Tribal Relations

BNSF's network lies within or adjacent to 86 tribal lands. Nurturing and strengthening these relationships increase safety, co-creates economic value and protects the environment. Since 2014, our Tribal Relations Director has connected with more than 80 tribal communities on key topics such as rail safety, economic development opportunities and cultural and environmental issues.

BNSF's Tribal Relations program is the first of its kind among U.S. Class I railroads. Today, our Tribal Relations Director works to strengthen our relationships with the diverse tribal nations along our network. This includes establishing communications protocols between tribes, First Nations and BNSF. In addition, we continue to foster collaboration on key agreements from project permitting to tax agreements, as well as hazmat and first-responder training.

We take pride in BNSF's tradition of supporting nonprofit organizations focused on helping Native Americans, including an almost 25-year history of funding scholarships for Native American youth through the [American Indian Science and Engineering Society](#). Read more about tribal relations [here](#) and in our [2019 Annual Review](#).



## Our Generous Employees

BNSF team members are passionate about getting involved and giving back to their communities. We encourage this mindset, and we work to provide many volunteer opportunities and other assistance to local nonprofit agencies throughout the year at each of our facilities. Read about how BNSF and our team members contribute to their communities in [Rail Talk](#) and our [2019 Annual Review](#).

## Responsibly Managing Properties

We work diligently to consult with communities on an array of matters concerning our properties, ranging from site contamination and environmental impacts to noise pollution and site planning. Engaging with communities helps us understand their needs and expectations, which improves our social license to operate and helps BNSF effectively and efficiently manage and develop properties.

Many of our facilities are located on legacy sites where predecessor railroads and other companies may have conducted operations for up to a century. We address environmental impacts at our facilities regardless of their origin, and work directly with communities, regulatory agencies and other key stakeholder groups to actively manage and track our efforts.

In the last decade, BNSF has invested approximately \$400 million toward remediation of our legacy sites, and we have rehabilitated and/or closed approximately 190 sites. We are currently developing new metrics to measure our progress, and we remain committed to enhancing our approach to land management so we continue to operate in a way that benefits local communities and economies.

# MATERIALITY

In 2017, we conducted a materiality assessment to identify and prioritize the most significant sustainability issues for BNSF and our external stakeholders. The assessment revealed 20 material sustainability topics for our company. We address how we manage and monitor these topics throughout our report.

The materiality matrix is structured as follows:

	OUR OPERATIONS	OUR CUSTOMERS	OUR EMPLOYEES	OUR COMMUNITIES
<b>MOST IMPORTANT</b>	<ul style="list-style-type: none"> <li>Infrastructure Investment</li> <li>New Technologies</li> <li>Planning and Permitting</li> </ul>	<ul style="list-style-type: none"> <li>Network Efficiency and Resiliency</li> </ul>	<ul style="list-style-type: none"> <li>Occupational Health and Safety</li> </ul>	<ul style="list-style-type: none"> <li>Public Safety</li> </ul>
<b>VERY IMPORTANT</b>	<ul style="list-style-type: none"> <li>Cost Competitiveness</li> <li>Portfolio of Transported Materials</li> <li>Waste and Spills</li> <li>Regulations and Compliance</li> <li>Climate Change and Emissions</li> </ul>	<ul style="list-style-type: none"> <li>Customer Experience and Ease of Doing Business</li> </ul>	<ul style="list-style-type: none"> <li>Labor Management</li> <li>Talent Acquisition and Retention</li> </ul>	<ul style="list-style-type: none"> <li>Local Community Engagement</li> </ul>
<b>IMPORTANT</b>	<ul style="list-style-type: none"> <li>Energy Efficiency</li> </ul>	<ul style="list-style-type: none"> <li>Supplier Social and Environmental Performance</li> <li>Collaboration and Partnerships</li> </ul>	<ul style="list-style-type: none"> <li>Diversity and Inclusion</li> </ul>	<ul style="list-style-type: none"> <li>Land Use and Property Management</li> </ul>

# APPENDIX: MATERIAL SUSTAINABILITY ISSUES

IMPORTANCE	MATERIAL ISSUE	LOCATION
Most Important	Occupational Health and Safety	Approaching Others About Safety
		Safety Training
		BNSF Global Driver Training Program
	Public Safety	Emergency Response & First-Responder Training
		Fire-Fighting Trains
		Grade-Crossing Safety
		BNSF Global Driver Training Program
	Network Efficiency and Resiliency	Moving Our Economy Efficiently
		Creating a More Efficient Fleet
		Integrating Positive Train Control & Trip Optimizer
		Preventative Maintenance & Wayside Detectors
		Energy Management Systems Software
		Weather Preparedness
	Infrastructure Investment	Supporting Customer Growth
		Advancing Our Operations
Rail Development		

IMPORTANCE	MATERIAL ISSUE	LOCATION
Most Important	New Technologies	Utilizing Technology at Intermodal Facilities
		Battery-Electric Locomotives
		Evaluating New Technologies
	Planning and Permitting	Responsibly Managing Properties
		Public Projects
		BNSF Logistics Parks, Logistics Centers & Certified Sites
Very Important	Cost Competitiveness	Creating a More Efficient Fleet
		Pricing & Tools
	Portfolio of Transported Materials	What We Carried in 2019
	Waste and Spills	Spill Prevention & Hazardous Materials Handling
	Regulations and Compliance	Safety Training
		2019 Code of Conduct
	Climate Change and Emissions	Emissions & Our Carbon Footprint
	Customer Experience and Ease of Doing Business	Supporting Customer Growth
		Customer Assistance
	Labor Management Relations	Move Your Career Forward
	Talent Acquisition and Retention	Engaging Our Employees
	Local Community Engagement	BNSF Railway Foundation
Strengthening Tribal Relations		

IMPORTANCE	MATERIAL ISSUE	LOCATION	
Important	Energy Efficiency	Energy Management Systems Software	
	Supplier Social and Environmental Performance	Suppliers	
	Collaboration and Partnerships		Community Support
			Fire-Fighting Trains
			Emergency Response & First-Responder Training
			Strengthening Tribal Relations
	Diversity and Inclusion		Diversity & Inclusion
Land Use and Property Management		Responsibly Managing Properties	



## BNSF Railway is a Berkshire Hathaway Company

Berkshire Hathaway and its subsidiaries engage in diverse business activities, including insurance and reinsurance, utilities and energy, freight rail transportation, finance, manufacturing, retailing and services.