



UNION PACIFIC

# 2017 Building America Report

A report to communities on our social, environmental and economic sustainability progress.



# About the Report

Union Pacific's mission of service defines us and drives our commitment to safely transport products across the country, provide good jobs, operate ethically and invest in our communities.

This report details our progress in key areas supporting social, economic and environmental sustainability pillars: operating safely, strengthening communities, engaging employees and preserving the environment. We also summarize our 2017 financial performance.

We used the Global Reporting Initiative's global sustainability reporting standards as a guide to report our most material social responsibility issues. This publication focuses on initiatives and accomplishments from the 2017 calendar year and includes 2017 data, unless otherwise noted

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*On the cover: From top to bottom, a safety briefing in North Little Rock, Arkansas, and Laura Finch in Council Bluffs, Iowa.*



# Letter to Stakeholders

Trust was a major theme in 2017 – trust in news, government and business. At Union Pacific, our reputation for having a passion for performance, high ethical values and dedication to teamwork is a source of pride.

This report is part of the ongoing conversation with you, our stakeholders, who trust us to operate responsibly and transparently as we fulfill our promise to build America. It details the many ways we make a difference in the communities where we live and work – delivering goods Americans use every day; helping our customers be more efficient and sustainable; creating family-supporting jobs; building vibrant, safe communities; and attaining our overall goal to operate in an incident-free environment.



*Chairman Lance Fritz visits with Gang 9075 System Laborer Chuck Fields at a leadership field visit in Clinton, Iowa.*

Each section of this Building America Report describes key initiatives and reflects on 2017's performance. We identified these materiality pillars by listening to our stakeholders and understanding what's important, and why.

- **Economic Impact** illustrates how Union Pacific drives economic growth in the 23 states where we operate through employment, capital investments and in-state sourcing efforts.
- **Operating Safely** details our relentless efforts to maintain a safe railroad for our employees and the communities we traverse. It is equally important to educate our neighbors about safety near railroad tracks.
- **Strengthening Communities** demonstrates our commitment to act for a greater good, giving back our time, money and expertise. Through these efforts, we can better connect with each other and make a positive difference for future generations.
- **Engaging Employees** outlines our promise to create fulfilling careers with advancement opportunities, as well as promote healthy lifestyles.
- **Preserving the Environment** highlights efforts to increase fuel efficiency, reduce carbon emissions, and build partnerships with communities and government agencies protecting ecosystems across our network.

Our success is deeply rooted in innovation and a mindset of never being satisfied with current results. We challenge ourselves to look for new ways of doing things, in our daily tasks and on a global scale. For example, I'm proud of our team for creating SensorX – a smart sensor that measures vibration and rail movement, collecting 40,000 measurements a second. Originally designed to feed the precision needs of Machine Vision – an erector-set-like portal outfitted with high-speed cameras and lasers to measure 22 different components of passing rail cars for potential defects – the technology quickly turned into a stand-alone product. We continue evolving it, learning from results.

In 2017, our Premium Operations team rolled out UP GO, a new mobile app similar to pre-check for airlines. It allows dray drivers frequently visiting our intermodal ramp in Lathrop, California, to verify information, reducing delays. We have not yet reached the app's full potential, and I'm excited to see how we can use this tool to enhance safety and security, lower congestion and shorten lines – another step toward reducing emissions.

Union Pacific's sustainability efforts were recognized globally by CDP, receiving an A- and leadership status on the agency's 2017 climate change survey. We are proud of this accomplishment and committed to finding new ways to further reduce climate change risk.

Our dedication has never been stronger to driving a healthy environment, positively impacting society and supporting a growing global economy.

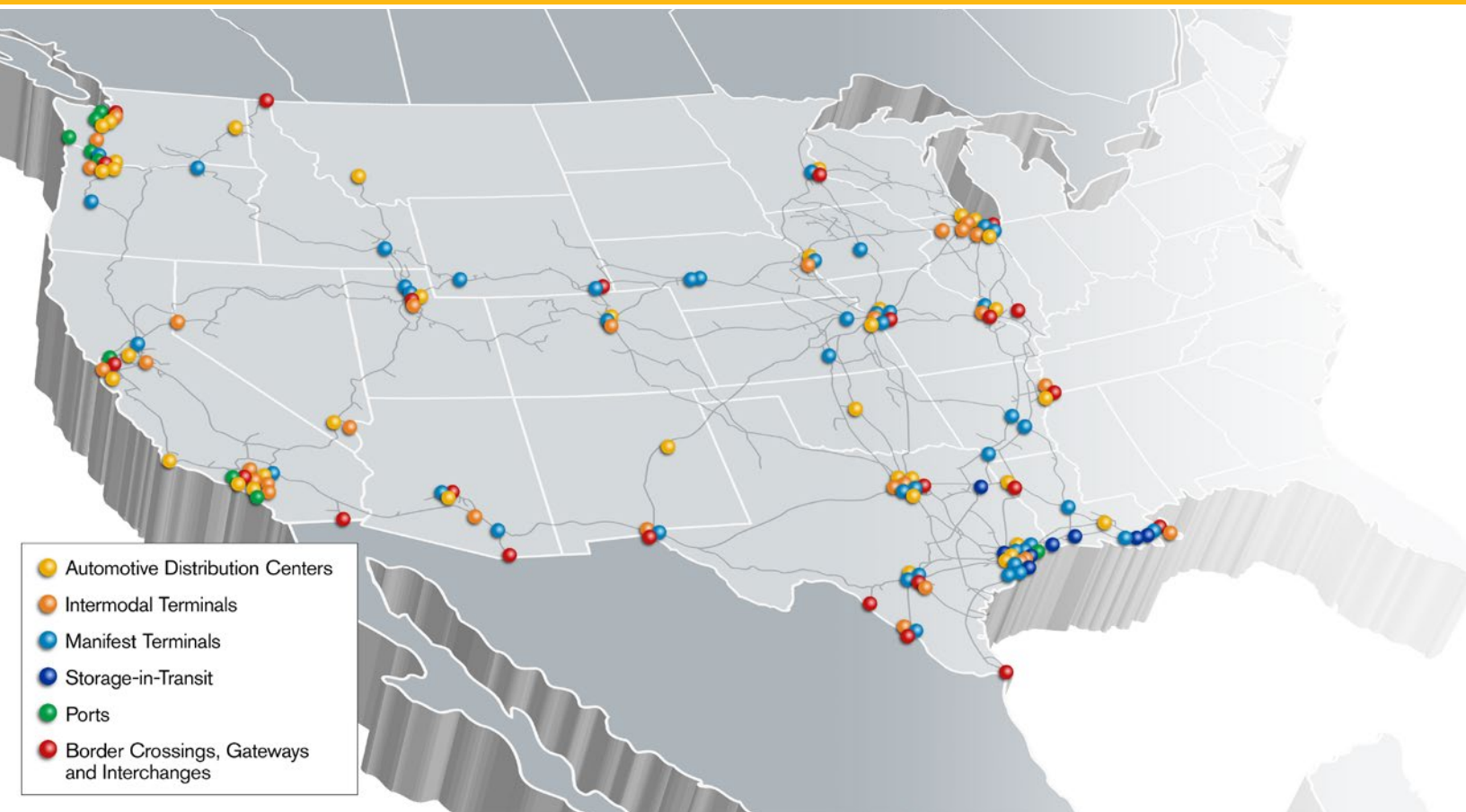
A handwritten signature in black ink, reading "Lance Fritz".

**Lance Fritz**  
Chairman, President and CEO

# Our Company

Union Pacific Railroad is the principal operating company of Union Pacific Corporation (NYSE: UNP). We are one of America's most recognized companies, with a heritage of building the country and a vision to keep doing so.

Our rail network connects 23 states in the western two-thirds of the country, providing a critical link in the global supply chain. Over the last 10 years, from 2008 to 2017, Union Pacific invested \$34 billion in our network and operations, supporting America's transportation infrastructure and enabling economic growth.



## Vision

### Building America

Our vision symbolizes the Union Pacific experience for all the people whose lives we touch. It connects the importance of UP's rail transportation to America's economy, honors the generations that preceded us and is the promise for the generations that will follow.

## Mission

### Dedicated to Serve

Union Pacific works for the good of our customers, shareholders, communities and one another. Our commitment defines us and drives the economic strength of our company and our country.

## Values

### Performance

Our passion, concentration and determination will drive our safety, customer satisfaction and quality results.

### High Ethics

Our reputation will always be a source of pride for our employees and a bond with our customers, shareholders and communities.

### Teamwork

We are all part of the same team, and working together to reach our common goals is one of our strengths. Communication and respect are the foundation of great teamwork.

## Financial Performance

Freight railroads are the backbone of the U.S. economy, supporting the livelihoods of employees in nearly every sector. Union Pacific's diversified portfolio generates its operations' profits and shareholder returns, further stimulating the economy.

In 2017, we reported net income of \$10.7 billion or \$13.36 per diluted share, compared to \$4.2 billion or \$5.07 per diluted share in 2016. After adjusting for the impact of corporate tax reform which was passed prior to year-end, net income was \$4.6 billion or \$5.79 per diluted share\*, 10 and 14 percent increases, respectively, compared to 2016. Our operating revenue was \$21.2 billion compared to \$19.9 billion in 2016, a 7 percent increase, and our adjusted operating income was \$7.8 billion\* compared to \$7.3 billion, an 8 percent increase.

Overall carloadings were up 2 percent in 2017 led by Industrial Products and Coal business unit increases of 12 percent and 6 percent, respectively, driven primarily by a robust increase in frac sand shipments. Automotive shipments were down 3 percent, resulting from lower domestic sales and reduced vehicle production, while Chemical and Agricultural Product shipments were both down 2 percent, as we experienced declines in our crude oil volumes and grain carloadings. Intermodal volumes were flat compared to 2016.

*\* Non-GAAP results, adjusted to exclude Corporate Tax Reform impact. See Union Pacific's website, under Investors, and select Annual Report 10-Ks to read the Feb. 9 filing for a GAAP reconciliation.*

## What We Carry

Union Pacific moves the goods American families and businesses use every day, including the food we eat, the cars we drive, the chemicals to clean our water and the steel to build our communities. We have roughly 10,000 customers and work to deliver their products in a safe, reliable, fuel-efficient and environmentally responsible manner.

Our railroad directly serves many of the fastest growing cities in the United States and connects the country's global supply chain at all major West Coast and Gulf Coast ports to Canada, Mexico and the country's eastern gateways. In 2017, nearly 40 percent of our freight originated or terminated outside of the U.S.



## DIVERSIFIED BUSINESS PRODUCTS

### Agricultural Products

We haul the whole grains and other agricultural goods feeding America and many other parts of the world.

### Automotive

We transport automotive parts, finished vehicles and aftermarket vehicles from assembly plants and distribution centers, as well as West Coast and Gulf of Mexico ports.

### Chemicals

We carry the chemicals needed to clean drinking water and fertilize crops. We also transport petrochemicals, including plastics, crude oil and soda ash.

### Coal

Coal generated more than 30 percent of America's electricity in 2017, according to the U.S. Energy Information Administration. We ship coal from mines in the Southern Powder River Basin, Utah, Colorado, southern Wyoming and southern Illinois, delivering to electric plants, as well as ports.

### Industrial Products

We carry a broad range of raw materials and finished goods, including steel, pipe, frac sand, cement, military equipment, wind turbine components and lumber.

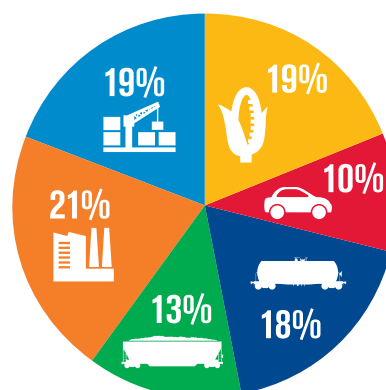
### Intermodal

We transport intermodal freight containers for domestic and international shippers, moving products such as electronics, toys, furniture and clothing. One Union Pacific train takes up to 300 trucks off America's congested highways.

### Mexico Markets

We are the leading freight transportation services provider between the United States and Mexico, and the only railroad serving all six major Mexico gateways. Cross-border traffic with Mexico comprised about 11 percent of Union Pacific's total 2017 volume.

## 2017 FREIGHT REVENUE



As the needs of our customers evolve, we rise to meet them. Effective Jan. 1, 2018, Union Pacific consolidated its six major business units into four: Agricultural Products, Energy, Industrial and Premium. We refocused our customer service center and consolidated four subsidiaries into one – [Loup Logistics Company](#) – to better serve our customers. Loup combines the strengths of Union Pacific Distribution Services, Streamline, ShipCarsNow and Insight Network Logistics to provide innovative transportation logistics services that help connect shippers to rail.



## Risk Oversight Approach

We operate a dynamic enterprise risk management process with continuous monitoring to identify and address potential concerns, including those arising in the ever-changing economic, political, legal and technology threat environment in which Union Pacific operates.

The Union Pacific Board of Directors oversees assessment and management of our critical enterprise risks. Management identifies and prioritizes these risks, including those disclosed in our [Annual Report Form 10-K](#), and regularly presents to the board.

The board's Audit Committee is responsible for oversight, managing risks related to financial reporting, environmental matters and compliance, receiving reports throughout the year from the chief compliance officer and senior executives who are responsible for financial reporting, cybersecurity and environmental matters. It also oversees Union Pacific's internal audit of enterprise risks selected for review and evaluation based upon our annual assessment model, designed to evaluate the effectiveness of mitigating controls and personnel activities. Internal auditors present findings regarding the mitigating controls and processes for the enterprise risks selected for review. The committee, in turn, reports those findings to the board.

## Sustainability Management Approach

Our business grows by understanding the needs of our communities and customers – and responding to those needs with dedication and commitment. Our sustainability approach reflects this. We are committed to engaging employees in our mission, transporting products safely, providing family-supporting jobs, operating ethically, protecting and strengthening the environment, and investing in America's communities.

Union Pacific's Chairman, President and CEO, and senior management oversee our corporate social responsibility strategy and report progress to the board of directors. A cross-functional management team is responsible for development and day-to-day operations while our nearly 42,000 full-time employees embrace and implement the strategy. Our corporate citizenship is important – it's a way to unify our diverse workforce around a single purpose.

## OUR SUSTAINABILITY AND CITIZENSHIP GOALS

Union Pacific's Building America Report details the company's progress toward key pillars of our sustainability and citizenship strategy:

- Operating a safe, efficient and environmentally responsible rail network that delivers the best customer experience.
- Providing employees with the safest work environment.
- Constantly improving employee, customer and public safety through training, education, innovation and investment.
- Developing programs and processes making us an employer of choice.
- Investing in our network infrastructure to enhance safety, service and efficiency.
- Growing our business profitably and responsibly so we can invest in the future and positively impact employees, communities, customers and shareholders.
- Creating economic strength and improving quality of life in the 7,000 communities where we operate.

We track our performance toward these goals using the Key Performance Indicators (KPIs) shown in the table on page 7. Modeled after Global Reporting Initiative standards, our KPIs align with our stakeholder groups' priorities. Achieving success in each category directly impacts Union Pacific's business. KPIs are updated annually in this report. Financial performance and Operating Safely numbers are presented during Union Pacific's quarterly earnings calls.

## BUSINESS AND INDUSTRY AFFILIATIONS

Union Pacific is a member of many national industry and business organizations, including the following:

- |                                     |  |  |
|-------------------------------------|--|--|
| ▪ American Frozen Foods Institute   | ▪ Intermodal Association of North America        | ▪ National Rail Labor Conference               |
| ▪ American Wind Energy Association  | ▪ Midwest Association of Rail Shippers           | ▪ National Safety Council                      |
| ▪ Association of American Railroads | ▪ National Association of Manufacturers          | ▪ Operation Lifesaver                          |
| ▪ Business Roundtable               | ▪ National Association of Rail Shippers          | ▪ Southwest Association of Rail Shippers       |
| ▪ Food Shippers of America          | ▪ National Freight Transportation Association    | ▪ United States-Mexico Chamber of Commerce     |
| ▪ GoRail                            | ▪ National Grain and Feed Association            | ▪ U.S. Chamber of Commerce                     |
| ▪ GreenBiz Executive Network        | ▪ National Minority Supplier Development Council | ▪ Women's Business Enterprise National Council |

## Key Performance Indicators

FINANCIAL	2015	2016	2017
<b>Reported net income</b>	\$4.8 billion	\$4.2 billion	\$4.6 billion*
<b>Operating revenue</b>	\$21.8 billion	\$19.9 billion	\$21.2 billion
<i>*Non-GAAP results, adjusted to exclude Corporate Tax Reform impact. See Union Pacific's website, under Investors, and select Annual Report 10-Ks to read the Feb. 9 filing for a GAAP reconciliation.</i>			
OPERATING SAFELY	2015	2016	2017
<b>Rail crossing accidents</b> (per million train miles)	2.28	2.43	2.55
<b>Reportable injury rate</b> (per 200,000 employee-hours)	0.87	0.75	0.79
<b>Public outreach</b>	More than 15,000 events reached more than 600,000 people	More than 14,500 events reached more than 498,000 people	More than 16,200 events reached more than 475,000 people
STRENGTHENING COMMUNITIES	2015	2016	2017
<b>Capital program</b> (private funds, no taxpayer dollars)	\$4.3 billion	\$3.5 billion	\$3.1 billion
<b>Spend with minority- and women-owned businesses</b>	\$423 million	\$325 million	\$406 million
ENGAGING EMPLOYEES	2015	2016	2017
<b>Percent of employees unionized</b>	85%	85%	85%
<b>Workforce diversity</b>	6% Female, 94% Male 2% Asian 11% Black 73% Caucasian 12% Hispanic 2% Native American	6% Female, 94% Male 2% Asian 11% Black 72% Caucasian 13% Hispanic 2% Native American	6% Female, 94% Male 2% Asian 12% Black 72% Caucasian 13% Hispanic 1% Native American
<i>U.S. Population 2015 census data (permits reporting of more than one race): 5% Asian, 13% Black, 77% Caucasian, 17% Hispanic, 1% Native American</i>			
PRESERVING THE ENVIRONMENT	2015	2016	2017
<b>Energy usage</b>	44.5 million megawatt hours	40.6 million megawatt hours	41.9 million megawatt hours
<b>Water usage withdrawals</b>	1.54 billion gallons	1.25 billion gallons	1.14 billion gallons
<b>GHG emissions</b>			
Intensity per million gross ton miles	12.7 metric tons	12.6 metric tons	12.34 metric tons
Locomotive fossil fuel emissions (scope 1)	10,834,984 metric tons	9,913,870 metric tons	10,216,978 metric tons
Fossil fuel emissions (scopes 1 and 2)	11,683,549 metric tons	10,685,250 metric tons	10,969,898 metric tons
Employee travel (scope 3)	19,803 metric tons	18,603 metric tons	18,466 metric tons
Purchases from biomass sources	129,600 metric tons	119,872 metric tons	125,359 metric tons
<b>Waste</b>			
Total waste generated	1.04 million tons	1.10 million tons	1.25 million tons
Tonnage diverted from landfills	68%	68%	70%

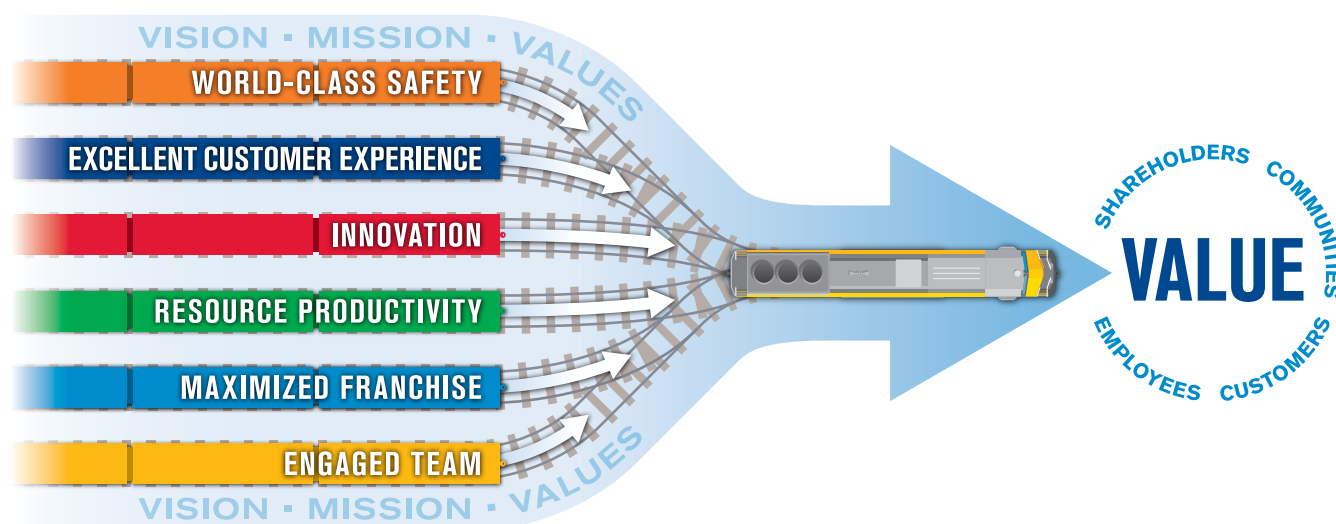


# Stakeholder Engagement

Everything Union Pacific does is built on our vision, mission and values. Focusing our efforts around our six-track Value Strategy creates long-term value for our four key stakeholders: employees, customers, communities and shareholders.

- **World-class safety:** An evolving model that incorporates individual accountability, data-driven processes and a relentless examination of every deviation to understand root causes, eliminating incidents and mitigating risk.
- **Excellent customer service:** More than the service product, we anticipate needs, keep commitments and offer solutions. The customer experience plays a critical role in our ability to grow.
- **Innovation:** Ever-present throughout the railroad, innovation is about not being satisfied with current results and thinking outside the box through a combination of “little I” approaches – a new way of thinking about routine tasks – and “big I” concepts leading to substantial change.
- **Resource productivity:** Getting the most out of what we have. This means turning cars faster, making assets last longer and having fuel take us further.
- **Maximized franchise:** This is more than our physical footprint on a map. It includes our employees and their expertise, our service products, market reach and proprietary technology.
- **Engaged team:** When employees are empowered and respected, they feel connected to the company. This inspires passion and dedication, while leveraging diverse talents and creating the best ideas.

Union Pacific's approach to sustainability requires engaging with our four key stakeholder groups to understand their evolving needs, ultimately creating competitive advantages for customers, job stability for employees, solid returns for our shareholders and economic strength in our communities.



## EMPLOYEES

Union Pacific employees work 24/7 in more than 7,000 communities across our 23-state service area. We engage employees through the following channels:

- Communication from our CEO in many forms, such as online and in-person town halls with question-and-answer sessions; CEO videos that cover key issues including safety and employee engagement; and a CEO blog that highlights observations from field visits and topics impacting the company.
- Information Television network.
- Customized local newsletters.
- Senior management town halls with question-and-answer sessions.
- Employee clubs, resource groups, networks, focus groups and surveys.
- Labor Relations Connection, an online portal for union employees.
- Ethics bulletins and our values line, allowing employees to anonymously report concerns 24/7.

## CUSTOMERS

Union Pacific has great relationships with its customers. At the heart of those relationships is great communication. Communication enables us to develop solutions meeting their changing needs and supporting growth. We engage customers through the following channels:

- Regular face-to-face, teleconference and virtual meetings.
- [Our customer website.](#)
- Social media.
- Customer bulletins and emails.
- Estimated time-of-arrival notifications.
- Customer surveys and forums, evaluations and suggestions.
- Our Customer Care and Support team.



## COMMUNITIES

Union Pacific's business positively impacts local communities through economic development, family-supporting jobs and reduced road congestion. We seek to support communities and manage potential negative impacts through the following channels:

- Local public affairs representatives who regularly work with elected officials, economic development alliances, civic groups and other community organizations.
- Our national 24/7 emergency hotline. In addition to emergency response, operators work with callers reporting issues, such as blocked crossings.
- Event sponsorships and employee volunteering.
- [Community Ties Giving Program](#).
- [Our Crossing Accident Reduction and Education Safety \(UP CARES\) program](#).
- Free safety training for emergency responders.
- [Inside Track](#) – our website dedicated to sharing news, photos and video about Union Pacific, our employees and the communities where we live and work.
- Social media platforms including Facebook, LinkedIn, Twitter, Instagram, YouTube and Glassdoor.

## SHAREHOLDERS

Clear communication with shareholders is important to Union Pacific. We engage them through the following channels:

- Annual reports, proxy statements and SEC filings.
- [Corporate Governance](#) of Union Pacific and its board of directors.
- Our [Investor Relations site](#) featuring upcoming events, public filings, industry reports, shareholder resources and answers to frequently asked questions.
- Annual Building America Report and [Fact Book](#).
- Shareholder meetings with management and investor conferences.
- Quarterly earnings, reports and conference calls.



*Rail Gang 9102 Spike Operator Kenneth Jacobs and Assistant Foreman Damien King value peer support.*

## Other Key Audiences

### REGULATORY OFFICIALS

Union Pacific works closely with regulatory officials to align our business with the country's infrastructure requirements, and shape a responsible and sustainable operating environment through the following channels:

- Transparent compliance reports, voluntary agreements and in-person meetings.
- Ongoing dialogue via staff in Washington D.C. and across our network.
- Participation in the Association of American Railroads (AAR) and U.S. Environmental Protection Agency's (EPA's) SmartWay Transport Partnership.
- Employee and corporate regulatory and legislative advocacy.
- The Union Pacific Environmental Management Program.
- Collaboration with U.S. Customs and Border Protection (CBP) and other government agencies.

### SUPPLIERS

Suppliers are an important part of Union Pacific's business – they help us serve our customers with excellence and provide quality materials. We manage suppliers through our [Supplier Code of Conduct and Quality](#) program, engaging them through the following channels:

- Electronic commerce capabilities.
- Supplier performance tracking system.
- Supplier diversity program.

## Key Awards and Recognition

Union Pacific is proud of the external recognition we've received from our efforts to operate safely, strengthen communities, engage employees and preserve the environment. We were recognized with the following awards:

- No. 1 in Fortune's Most Admired among trucking, transportation and logistics companies.
- No. 1 in Brand Finance's 2017 listing of the 500 most valuable U.S. brands.
- Named in Forbes' Best Employer list.
- Ranked No. 46 on Barron's World's Most Respected Companies List.
- Among top 10 on Monster's Best Companies for Veterans in 2017.
- Earned a spot on the 2017 Military Friendly Employers List by MilitaryFriendly.com.
- Received the Extraordinary Employer Support Award from the Employer Support of the Guard and Reserve (ESGR) Nebraska Chapter, recognizing our sustained support to the Reserve Components of the United States Armed Forces.
- Inbound Logistics recognized Union Pacific as one of the 75 Green Supply Chain Partners for the fourth year.
- Ranked No. 61 among all U.S. businesses in Newsweek's 2017 Green Ranking.
- Recognized as a top performer for the fifth time in the Soy Transportation Coalition Railroad Report Card.
- EPA's SmartWay Award presented to Union Pacific Distribution Services, now known as Loup Logistics, for the second consecutive year.

# Our Economic Impact

Union Pacific exists to build America. Our positive economic impact isn't just a by-product of our business, it's central to our vision and purpose.

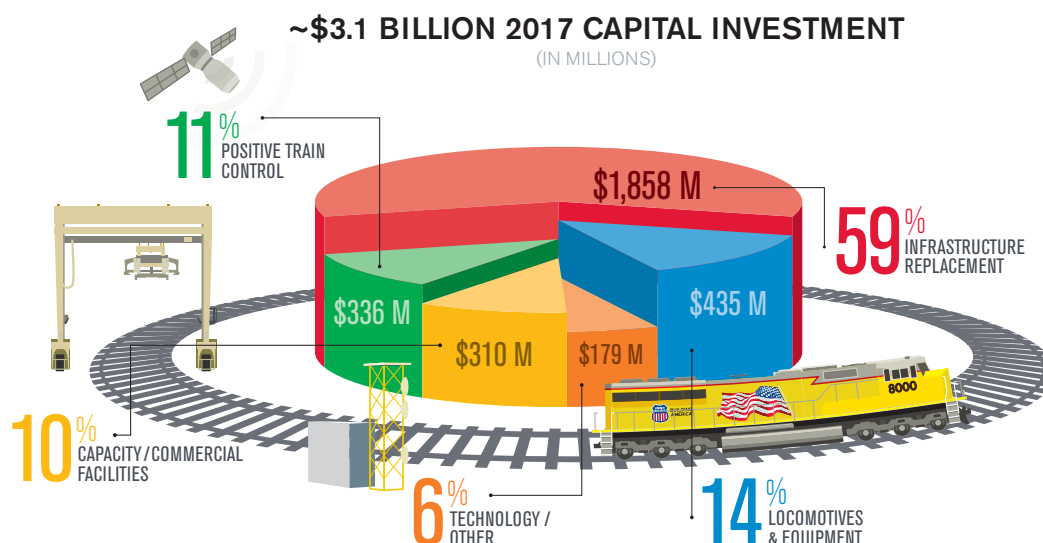
Our railroad connects communities and resources, generating opportunity and supporting growth in the 23 states where we operate and across the country. We create economic value not only through returns generated for shareholders, but also employment for roughly 42,000 employees, the business we give suppliers, and every business opportunity, commercial relationship and innovative idea our network makes possible.

## Investing in Infrastructure

Union Pacific's capital investments create economic opportunity through employment and supply chain activity. They also represent investments in building a sustainable rail network that can support economic growth for generations to come. For example, freight moving in Texas is projected to nearly double, from 2.2 billion tons to more than 4 billion tons by 2045.<sup>1</sup> A state advisory committee warned such an extreme increase could worsen an already congested highway system, and alternative modes – such as rail – will be more important than ever for the state to remain economically competitive. Union Pacific is ready to handle increased volume. We've invested \$5.4 billion in Texas since 2009, and in January 2018, we announced plans to build a \$550 million rail yard – the largest capital investment in a single facility in our

155-year history. [Brazos Yard](#) will function as a classification yard where rail cars are separated and sorted by destination before being assembled into new trains headed across the country. The facility will sit at the convergence of seven Union Pacific rail lines, making it a strategic point for freight rail traffic traveling north, south, east and west. These investments are proof of our commitment to meeting the demands of the state, residents and businesses.

The more we invest in building a safe and efficient railroad today, the more our infrastructure can support communities going forward. The chart on this page shows the level of infrastructure capital investments Union Pacific made in 2017.



### Infrastructure Replacement

Our largest form of capital investment strengthens our rail network through track, signal and bridge replacement projects.

### Locomotives and Equipment

New and upgraded locomotives, rail cars and equipment investments meet customer needs, enhance safety and reduce our environmental impact.

### Capacity and Commercial Facilities

New commercial facilities and network expansions increase capacity to support economic growth and opportunities to serve new locations.

### Positive Train Control (PTC)

This advanced system of technologies is designed to automatically stop a train before certain accidents occur, such as train-to-train collisions and incidents caused by excessive speed or unauthorized movements.

### Innovation

From apps managing train systems to enhanced track inspection equipment, we continually invest in new technologies enhancing safety, efficiency and service.

<sup>1</sup>Source: Texas Department of Transportation's Texas Freight Mobility Plan

## Creating Local Economic Opportunity

Union Pacific owns and operates more than 32,000 miles of railroad track in 23 states across the western two-thirds of the United States. We create economic opportunities for local communities through direct employment with Union Pacific, as well as prosperity created by local employee spending. Our capital investments create additional jobs and business opportunities through our supply chain, including in-state material and fuel purchases. The below chart shows Union Pacific's economic impact in the 23 states where we operate. In the following pages, we explore other local economic opportunities Union Pacific supports.

State	Employees	Payroll*	Route Miles	Capital Investment*	In-State Purchases*
Arizona	1,096	102.8	691	36.3	16.5
Arkansas	2,581	221.9	1,325	160.0	41.0
California	4,352	406.6	3,291	276.9	254.4
Colorado	901	91.3	1,506	52.8	141.9
Idaho	818	81.5	848	53.2	21.5
Illinois	3,926	339.4	2,308	144.5	1,269.3
Iowa	1,528	130.2	1,383	78.2	63.7
Kansas	1,215	124.5	2,198	75.2	251.1
Louisiana	1,135	110.9	1,143	95.0	27.4
Minnesota	425	39.4	645	17.7	180.2
Missouri	2,303	206.2	1,541	76.2	412.2
Montana	13	1.1	125	0.5	2.6
Nebraska	8,318	965.6	1,066	206.4	155.9
Nevada	511	43	1,193	43.4	10.3
New Mexico	485	46.5	618	25.8	1.7
Oklahoma	338	36.2	1,232	49.1	139.1
Oregon	1,511	136.9	1,073	75.6	103.2
Tennessee	49	3.9	12	0.1	81.1
Texas	7,315	692.3	6,306	825.0	1,728.8
Utah	1,259	119.5	1,248	66.7	316.0
Washington	322	28.4	532	14.7	128.6
Wisconsin	369	39.6	930	7.5	118.9
Wyoming	1,044	86.5	874	51.8	42.8
<b>Total</b>	<b>41,814</b>	<b>4,054.20</b>	<b>32,088</b>	<b>2,432.60</b>	<b>5,508.20</b>

\*In millions

# Local Economic Opportunities

## BUSINESS OVER THE BORDER

If combined, the 10 states touching the United States/Mexico border – California, Arizona, New Mexico and Texas in the U.S., and Baja California, Sonora, Chihuahua, Coahuila, Nuevo Leon and Tamaulipas in Mexico – would form the fourth largest economy in the world.<sup>2</sup> Union Pacific is the only railroad with access to all six major gateways.

Roughly 11 percent of our 2017 volume originated or terminated in Mexico – about 52 percent in imports and 48 percent in exports. DISELO, a multimodal transloading facility in Tizayuca, Hidalgo, Mexico, is the perfect example of the two nations' trade relationship. The U.S. imports raw materials, which are transformed into plastic pellets and sent back to Mexico where products are manufactured.

In this increasingly competitive environment, it's critical for the United States to strengthen its most important trade partnerships. However, we believe the North American Free Trade Agreement (NAFTA) requires modernization. For example, strengthened provisions should be incorporated to address the environment and labor, as well as e-commerce and cross-border data flows – concepts that didn't exist when NAFTA was originally written.



*A Union Pacific train crosses the Rio Grande before entering the U.S. at Eagle Pass, Texas.*

## FOOD TRAINS SERVE UP INDUSTRY GROWTH OPPORTUNITIES

Delivering fresh food to America's kitchen tables requires quick, reliable service. In 2017, we acquired Railex LLC's refrigerated and cold storage distribution assets in Delano, California; Wallula, Washington; and Rotterdam, New York. Their integration into Union Pacific's broader Food Network allows us to offer customers access to more food shippers than any other railroad, a wider range of capacity and complete service solutions in a rail-centric cold chain. Smoother transit times and less handling better protects fresh fruits and vegetables as they make their way from the West Coast to key markets in Chicago and the Northeast in as little as seven days.

<sup>2</sup>Source: U.S. State Dept.

## SHORT LINE PARTNERS EXTEND UP NETWORK

Short lines, connecting to Class 1 railroads coast to coast, play an important role in Union Pacific's franchise. One-quarter of our business originates or terminates on one of the 200 short lines directly connected to our main lines. We're taking a closer look at how we can best use these relationships to extend network opportunities. For example, Progressive Rail, a Minnesota-based company operating several short lines, invested millions in infrastructure – such as new sidings and switches – to accommodate substantial growth, especially in frac sand. The company's owner and president called Union Pacific a "listening machine" when it comes to collaborating and finding innovative solutions to handle increased volume.



*Productive, innovative relationships like the one we have with Progressive Rail's Randolph, Minnesota, customer facility are one way we're creating new success stories.*



*A Union Pacific train leaves Port Kelley, Washington, bound for Midwest and Northeast markets.*



# Enabling Innovation and Sustainability

The rail infrastructure Union Pacific maintains and operates serves as an innovation enabler. By helping businesses source new types of raw material and forming new partnerships, our network supports the transition toward a more sustainable economy.

## RAIL-SHUTTLE FACILITY HELPS FEED THE NATION

Missouri farmers know as well as anyone that time is money. A new MFA facility near Hamilton, Missouri, is saving farmers plenty of both. Exclusively served by Union Pacific, the rail-shuttle facility's centralized location eliminates hours of travel time, and its self-service weight scale and 1,500-bushel dump pits cut unloading time to 8 minutes. This allows farmers to quickly return to their fields, ultimately benefiting the entire region.

In addition to being four times more fuel efficient than truck, facilities like this demonstrate why rail also is the most efficient transportation option from the Midwest's grain belt to grain-deficient areas, such as Arizona and California. The states have plentiful chicken, cattle and dairy operations, which feed large cities like Phoenix or nearby Los Angeles, but their sandy, desert-type soil is not suitable for growing corn.

In partnership with Union Pacific, the Hamilton operation positions MFA to potentially reduce truck traffic by as many as 14 million bushels of grain, or 14,000 trucks annually. Learn more about the facility's unique features at [up.com](http://up.com).



MFA's new rail shuttle facility is located about 4 miles outside Hamilton, Missouri.

## QUALITY CONTROL EXTENDS WOOD CROSSTIE LIFE

Union Pacific annually replaces about 3.5 million of the 90 million main line wood crossties systemwide. To maintain this schedule, each tie needs to live up to its more than 20-year life. Thanks to our detailed quality control program, we ensure suppliers adhere to specifications through regular audits, inspections and presentations. Supply Chain category manager Nate Irby engages directly with suppliers, including six treating plants and more than 200 sawmills.

Our wood ties come from the nation's "wood basket" – Arkansas, Louisiana, Mississippi, Missouri, Tennessee and East Texas.

The majority are oak, due to its hardness and resistance to force. As trains roll by, wood ties respond well to the load and flex back. Our ties are box-hearted, meaning the heartwood of the tie is centered to prevent splitting. Specific drying and stacking techniques at seasoning yards by lumber mills also help ensure extended service life and less maintenance.

Wood is a naturally renewable material harvested using sustainable forest conservation methods.



Nate Irby, assistant manager-Strategic Sourcing, performs a supplier audit to ensure Union Pacific receives the best wood tie possible.

## NEW HIGH-SPEED ETHANOL TERMINAL OPENS

Thanks to a long-standing working relationship with Flint Hills Resources, Union Pacific handles the majority of the San Antonio and Austin, Texas, ethanol market. Due to increased demand, the companies realized they needed to improve efficiencies and increase capacity.

Union Pacific's first high-speed, 110-car ethanol unloading terminal was constructed on Flint Hills Resources' property. Opening in April 2017, the facility cut unload time from five days to one and increased train size from 80 cars to 110 – creating efficiencies for Union Pacific and Flint Hills Resources, and becoming the model for future Union Pacific facilities.



Union Pacific's first high-speed, 110-car ethanol unloading terminal in San Antonio, Texas.

## APP DELIVERS REAL-TIME UPDATES

When a vehicle breaks down on the road, few things are more important than knowing help is on the way. Union Pacific was the first Class 1 railroad to launch an online service in 2017 called REACH.

Using a mobile app or internet browser, drivers carrying Union Pacific intermodal containers in San Diego, Northern California, and Mesquite, Texas, can report an incident and request repair. The app allows the waiting driver to see who is coming and when they'll arrive, as well as rate the service provider.

Union Pacific uses the real-time information to update customers waiting on a delivery, and can use service provider ratings to pre-select preferred suppliers who are providing the intermodal community the best possible repair service.



*Union Pacific intermodal customers using REACH are reassured about upcoming deliveries.*

## Generating Opportunity Through Our Supply Chain

Union Pacific spent more than \$7 billion across our network of more than 61,000 suppliers during 2017. Our supply chain includes businesses in every one of the 23 states in which we operate, and this spending represents a significant portion of the economic impact our business generates.

Union Pacific was the first U.S. railroad to establish a supplier diversity program in 1982. Suppliers support our operations with fuel, engineering services, construction materials and much more. Union Pacific purchased about \$406 million in goods and services from more than 2,100 minority-, women- and veteran-owned businesses in 45 states. Our spending with diverse suppliers grew an average of 4 percent annually from 2009 to 2017. Approximately 48 percent of our critical suppliers, nearly 6 percent more than in 2016, reported purchasing goods and services from diverse suppliers, demonstrating their support for our diversity initiative.

## SERVICE PARTNER KEEPS LOCOMOTIVES MOVING

Just as Union Pacific is dedicated to building America, Accessories Plus, Inc. is a critical partner ensuring the health of our locomotive fleet. The African American-owned business based in Glidden, Texas, approached Union Pacific in 2007 with a plan to keep locomotive toilets clean and fresh for crews, as well as check and add lube oil, water and traction sand twice weekly. Their work eliminates countless bad orders – locomotives or rail cars with a mechanical defect – and minimizes downtime during crew changes.

In the last 10 years, Accessories Plus, Inc. has serviced more than 300,000 locomotives across Arkansas, Arizona, California, Colorado, Idaho, Iowa, Missouri, Nebraska, Nevada, New Mexico, Tennessee, Texas and Utah, and our partnership continues to grow. Today, pneumatic tanks dispense the sand directly into the locomotive. Custom-designed to accomplish this task, the tanks are capable of carrying and storing 25 tons of locomotive traction sand. Accessories Plus, Inc. also provides 24/7 Rapid Response vans, aides with inspection and air brake tests, and performs audits in conjunction with Union Pacific's environmental group.

The partnership is made stronger by our joint focus on safety. In the last 10 years, Accessories Plus, Inc. had one reportable injury.



*An Accessories Plus, Inc. sanding truck and employee ready to service locomotives at Union Pacific's Los Angeles Transportation Center.*

## INNOVATING OUR SUPPLY CHAIN

We looked to Silicon Valley for insights on how to improve our business. Plug and Play is the world's largest startup accelerator and innovation center. Union Pacific is the first railroad to serve as an anchor partner on Plug and Play's Supply Chain Innovation Platform.

As an anchor partner, Union Pacific participates in pitches from startup companies and votes on those we believe can deliver the most positive impact. We believe our transportation solutions help our customers compete in the global marketplace, and this partnership helps us stay on the leading edge of innovation solutions.

In 2018, we'll work with the winning startups on ways to innovate in our industry.

# Operating Safely

Safety is Union Pacific's No. 1 priority. As a company, we continuously look for innovative approaches to enhance the safety of our employees, our communities and the customers we serve. We invest significant resources in training, research and development, and public education – all with the goal of increasing rail safety awareness and improving safety.

## Rail Safety Maintenance

Rigorously maintaining quality rail infrastructure is foundational to our ability to operate safely. It helps prevent derailments, provides a safe path for train crews and avoids shipment delays for customers.

Union Pacific continuously inspects railroad tracks, locomotives and other equipment. Our track inspection program customizes schedules and techniques to examine each rail line, mile by mile. We inspected 5 million track miles in 2017, enough to cover our 32,000-mile network more than 156 times.

Efforts to strengthen our rail infrastructure contributed to a 14 percent improvement in track-caused Federal Railroad Administration (FRA) reportable derailments from 2016 to 2017. Track safety is a major focus for Union Pacific, and we continue working toward our goal of operating in an incident-free environment.

### SAFETY INSPECTION FLEET

We use state-of-the-art equipment to regularly inspect rail lines. Geometry cars use an optical gauge measuring system consisting of lasers and cameras under the rail car to produce real-time track geometry images. The system evaluates track structure wear and tests for defects to help prevent derailments, maintain track health and increase track longevity. Union Pacific has two evaluation cars, featuring military-grade navigation, covering a combined 70,000-80,000 track miles per year – enough to annually cover our mainlines at least twice.

We have four Gauge Restraint Measurement System (GRMS) vehicles positioned across our system to identify signs of wear or potentially weak spots in the rail. Each is capable of testing up to 60 miles of track daily, specifically focusing on curved sections. To simulate the force generated by a locomotive, the GRMS vehicle applies 9,000-10,000 pounds of lateral forces to the track. Its operator verifies any potential defect and immediately remediates. In 2017, we used GRMS vehicles to aid inspection of more than 31,000 track miles.

Currently in pilot testing, our Unmanned Geometry Box Car is equipped with an axle-mounted generator instead of a fuel tank. It tests track systemwide for geometry defects in regular train service, communicating in near-real time the type, severity and location of track defects to a data facility for verification and remediation.

More information regarding Union Pacific's track inspection fleet is available in our Track Inspection Media Kit at [up.com](http://up.com).

We inspected  
**5 MILLION**  
TRACK MILES



enough to cover our  
**32,000-MILE**  
network 156 times



Union Pacific's Maintenance of Way equipment has "Keeping Communities Safe" signage, emphasizing safety is our top priority.



## DRONE INSPECTIONS

Unmanned Aerial Systems (UAS), or drones, are part of Union Pacific's safety tool kit, collecting valuable information at derailment sites and natural disaster incidents, allowing us to assess our infrastructure and respond while keeping employees out of harm's way.

Union Pacific employees with a Federal Aviation Administration (FAA) Part 107 certificate, a government requirement to commercially operate drones, are stationed in all 16 service units across our network. Through 2017, 90 drones were in use and 100 employees received training specific to FAA regulations and Union Pacific policies. We plan to continue training employees in 2018. Field management is active in developing the program based on evolving technology, business need and feedback.

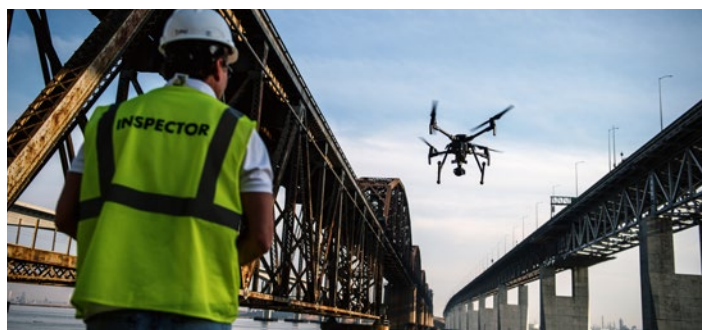
Current applications of drone technology are:

- Routine inspection of buildings, bridges, tracks and telecommunication equipment.
- Weather-related and/or operating incident assessment.
- Hydrography – Providing 3-D imaging of rivers and coastal areas for flood mitigation planning.
- Photography – Providing employee familiarization of yards, facilities and structures.



*This photo of flood damage in the wake of Hurricane Harvey was taken by a drone flying over the San Jacinto River in Houston, Texas.*

**MORE THAN**  
**100** Union Pacific  
employees received drone  
operation training in 2017



*Autonomous drones are tested on the railroad bridge adjacent to the Benicia-Martinez Bridge in California.*

## AMERICA'S TOP RAILROAD LEARNS TO FLY

Railroads have used UAS technology for rail structure inspections and incident assessment since 2014. Union Pacific is pioneering autonomous drone infrastructure inspection technology with help from a California startup. It's possible thanks to a program called Perceptive Navigation Technology, enabling us to fly drones in places without GPS coverage, such as within or under a large metal bridge or into deep culverts. Soon, our army of nearly 600 bridge inspectors will be able to inspect the railroad's more than 18,000 bridges while their steel-toed boots remain safely planted on the ground.

Watch Union Pacific's autonomous drones at work at [up.com](http://up.com).

## ONE SENSOR, ENDLESS SOLUTIONS

Broken wheels are one of Union Pacific's biggest safety concerns. Trackside technology is used to detect wheel health and determine if a passing car is steering straight down the rail. While effective, these wheel impact load detectors (WILD) sites examine wheels once every thousand miles.

In an effort to find a more cost- and maintenance-effective solution, we developed a "mini" WILD, of sorts, called SensorX. It's a smart sensor that measures vibration and rail movement, collecting roughly 40,000 measurements a second. Its data is collected and stored for further analysis. If necessary, train crews will be alerted to potential defects.

Designed as a technology platform, other components were added. For example, a scale measures car weight, determining empty versus loaded cars and whether they're properly loaded. This is a valuable tool as we continue improving the customer experience with real-time analytics.



*SensorX fits in the palm of the installer's hand but delivers big results.*



## REAL-TIME CUSTOMER RESPONSE TOOL

Union Pacific completed implementation of Mobile Work Order across our 23-state system in 2017. The automated reporting system increases customer satisfaction while improving Operating employees' lives, eliminating extra time spent reporting data at the end of their shifts.

Using a modified mobile phone, employees report freight car movements in real-time, providing our customers tracking capabilities while eliminating emails and phone calls. The technology allows Union Pacific to anticipate customer needs and quickly respond, ultimately helping our customers serve their own clientele. It also sets the stage for our next initiative, Local Service Notification, which uses GPS to send automated alerts to customers that crews are coming. This will help customers more effectively plan their work.



*The Mobile Work Order system in use in Union Pacific's Council Bluffs, Iowa, yard.*



*Dispatchers at Harriman Dispatching Center in Omaha, Nebraska, had their safest year on record, thanks, in part, to Remote Restriction technology.*

## ONLINE REQUESTS REDUCE RADIO TRAFFIC

Innovation is helping Union Pacific Engineering employees, train crews and dispatchers improve safety and productivity. In March 2017, we implemented Remote Restriction (RR) technology systemwide. It allows Engineering personnel to electronically request temporary track restrictions in real time via laptop, rather than using a hand-held radio to talk to dispatchers. The application includes user-friendly forms that reduce typos and communication errors. Reduced radio traffic also benefits employees engaged in safety-sensitive conversations and job briefings.

At the end of 2017, approximately 1,200 employees were trained on the technology, and 60 percent of all restrictions received were through RR.

# Positive Train Control

Union Pacific continues to make strides toward implementing Positive Train Control, an advanced system designed to automatically stop a train before certain accidents occur.

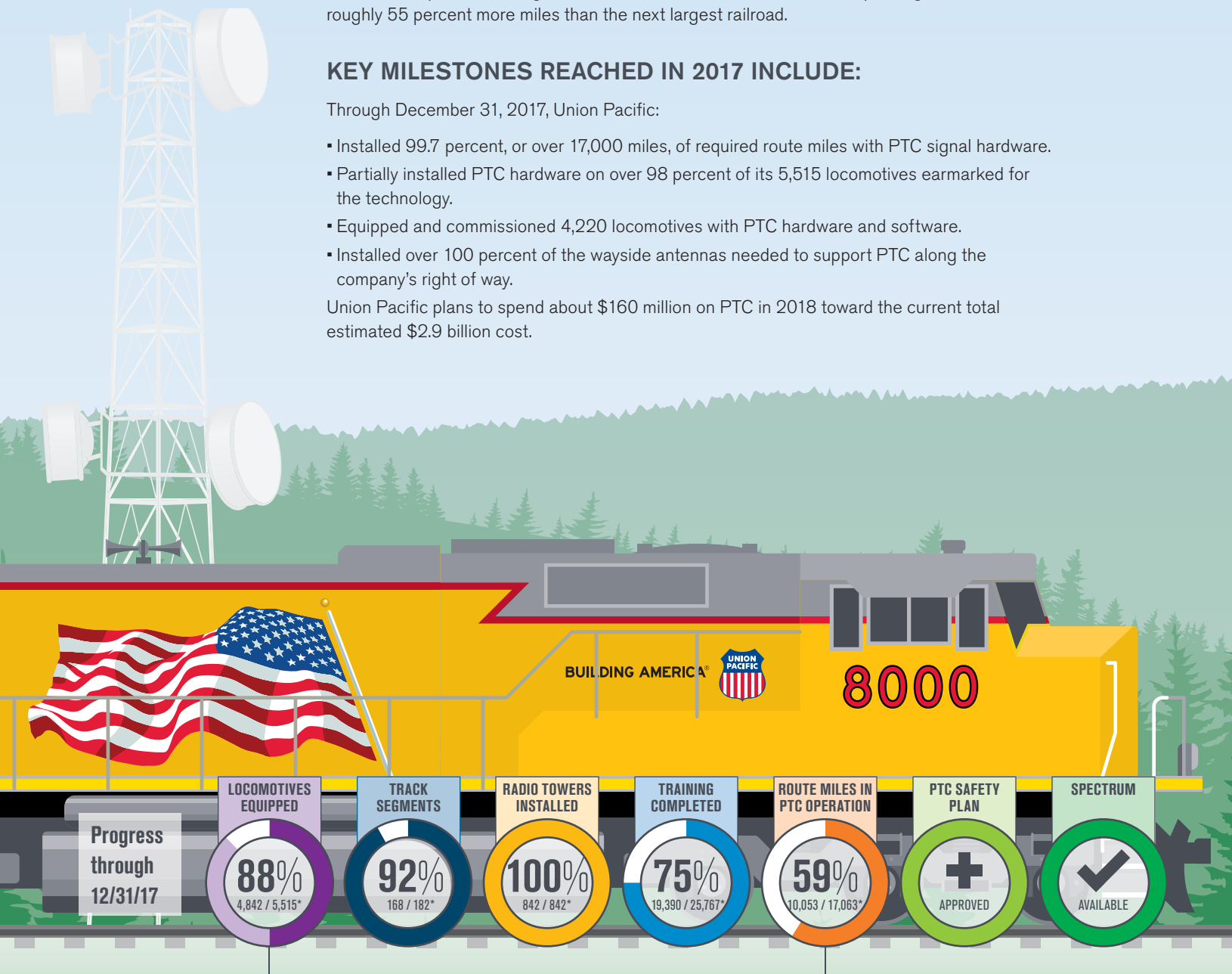
Our PTC footprint is the largest of all North American railroads, encompassing more than 17,000 route miles, roughly 55 percent more miles than the next largest railroad.

## KEY MILESTONES REACHED IN 2017 INCLUDE:

Through December 31, 2017, Union Pacific:

- Installed 99.7 percent, or over 17,000 miles, of required route miles with PTC signal hardware.
- Partially installed PTC hardware on over 98 percent of its 5,515 locomotives earmarked for the technology.
- Equipped and commissioned 4,220 locomotives with PTC hardware and software.
- Installed over 100 percent of the wayside antennas needed to support PTC along the company's right of way.

Union Pacific plans to spend about \$160 million on PTC in 2018 toward the current total estimated \$2.9 billion cost.



While the FRA notes only 2,849 (50%) UP locomotives are PTC equipped, nearly 4,850 are fully PTC equipped with the exception of a single component: the PTC-compatible, crash-hardened memory ("black box"). We made significant locomotive installation progress in 2017 as the supplier-related black box issue resolved. We expect this progress to continue in 2018.

With the FRA's conditional approval of our PTC safety plan, Union Pacific is running PTC operations on over 10,000 route miles in Arkansas, California, Colorado, Idaho, Illinois, Iowa, Louisiana, Minnesota, Missouri, Nebraska, Nevada, Oregon, Texas, Utah, Washington, Wisconsin and Wyoming.

\*Union Pacific submitted to the FRA a request to amend its PTC Implementation Plan. This request modifies the total requirement counts for each of these metrics. The numbers shown here reflect these updates and may vary from the FRA's quarterly industry status reports.

## SYSTEMWIDE PTC IMPLEMENTATION PROGRESS

Over 10,000 PTC-required miles were in operational status as of December 31, 2017, as shown in green. The remainder of PTC-required segments will be addressed in 2018.



### WHAT PTC DOES:

✅ Automatically stops a train before certain accidents caused by human error occur, including train-to-train collisions, derailments caused by excessive train speed, unauthorized train entry into work zones or movements through misaligned track switches.

### WHAT PTC DOES NOT DO:

❌ Will not prevent vehicle-train accidents at railroad crossings, stop trains when pedestrians are on the tracks, or prevent incidents due to track or equipment malfunctions.



# Handling Hazardous Materials Safely

Union Pacific is obligated to transport hazardous materials by federal law, while trucks are not. Our commitment to safely haul this material is reflected in our 99.99 percent success rate delivering without incident.

Union Pacific focuses on accident prevention, preparedness, response and recovery. Our Hazardous Materials Management group consists of highly trained experts in hazardous material transportation safety who work with customers and inspect their tank cars, ensuring products are properly secured.

## PREVENTION

Through our prevention efforts, Union Pacific partners with customers, employees, regulators and other stakeholders to conduct hazardous materials shipment inspections, sponsor training opportunities and actively participate in numerous industry initiatives focused on continuous improvement of hazardous materials shipments.

## PREPAREDNESS

While we work to prevent incidents involving hazardous materials, Union Pacific's Hazardous Materials Management group regularly prepares for such an event. We do this through building strong relationships with first responders and other stakeholders throughout the communities where we operate.



*Emergency responders learn railroad hazmat response techniques in Pueblo, Colorado.*

Union Pacific provides fire departments and other emergency responders along our routes with comprehensive training on minimizing derailment-related impacts. We provided classroom and hands-on training to roughly 7,200 local, state and federal first-response agencies.

We also sponsored 60 emergency responders from 15 states to attend a rail-specific hazmat training in Pueblo, Colorado. The five-day tank car safety training course focused on tank car assessments and repairs, and safely controlling hazardous material spills. Training also included a large-scale simulation of a hazardous material incident providing emergency responders with hands-on experience responding to accidents.

Over the last 10 years, Union Pacific trained over 50,000 emergency responders throughout our network. Union Pacific is a charter member of TRANSCAER® – a voluntary national outreach effort focused on assisting communities to prepare for and respond to a possible hazardous materials transportation incident. Union Pacific is a 12-time winner of the TRANSCAER® National Achievement Award.

We partner with stakeholders at the local, state, tribal and federal levels to establish geographic response plans. Conducting drills and exercises is another vital tool in preparedness. We regularly exercise our emergency response plans within our facilities, as well as with local, state, federal and tribal agencies.

Using our unique training tank cars and training box cars, we reach first responders on our system and provide various coaching opportunities and drills.

## RESPONSE

In the unlikely event of an incident involving hazardous materials, Union Pacific's Hazardous Materials Management group responds to safely and quickly mitigate the hazards to public health, environment and property. We do this by working with emergency response agencies, and our network of specialized contractors, and by utilizing our internal resources, such as firefighting trailers and waterway spill containment systems.

All of our hazardous materials professionals are trained thoroughly in hazardous materials response and understand the National Incident Management System. This allows for safe and effective response operations, while working together with our public partners.



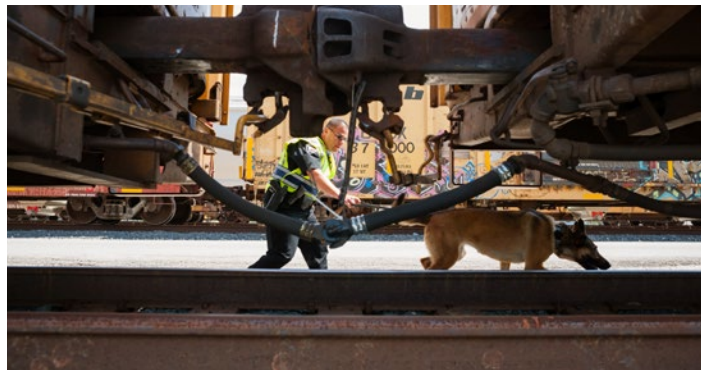
## RECOVERY

Once an incident is under control, our hazardous materials professionals continue ensuring the communities, environment, and Union Pacific's network have properly recovered. We do this through environmental remediation and proper product handling practices. Union Pacific is capable of removing product from damaged containers and placing it into non-damaged containers. We accomplish this with our state-of-the-art transfer trucks and equipment, as well as numerous smaller transfer trailers that can be utilized to safely and effectively remove liquid products. This creates a safer and more effective option for communities and reduces costs for our customers.

## SAFETY THROUGH SECURITY

The Union Pacific Police Department is a team of highly trained special agents dedicated to maintaining the railroad's security and integrity. The department holds accreditation from the Commission on Accreditation for Law Enforcement Agencies (CALEA), which is considered the gold standard in law enforcement accreditation and recognizes agencies meeting the highest law enforcement standards.

The Police Department uses security monitoring technology to protect critical infrastructure from intruders around the clock. It coordinates its operation with CBP, the U.S. Coast Guard, the Federal Bureau of Intelligence, the Department of Homeland Security, the Transportation Security Administration, and state and local law enforcement. Union Pacific was the first U.S. railroad named a partner in CBP's Customs-Trade Partnership Against Terrorism.



*Special Agent Raymundo Velarde, Jr. takes his partner, a Belgian Malinois dog named Bizi, on patrol in San Antonio, Texas.*



*Special Agent Nicholas Hammond inside the City of Houston Emergency Operations Center.*

## UP SPECIAL AGENTS HUDDLE FOR SECURITY

Reliant Stadium in Houston, Texas, hosted the 2017 Super Bowl. Union Pacific has a main line near the stadium, providing us an opportunity to discuss train safety and actively participate in security in conjunction with the big game.

While numerous special agents patrolled the tracks and Union Pacific facilities, Special Agent Nicholas Hammond had a unique vantage point. He was positioned inside the City of Houston Emergency Operations Center, serving as the central contact between Union Pacific and other local, state and federal agencies. With thousands of visitors flocking to the area, our involvement was essential in monitoring public safety near railroad operations.

## Safest U.S. Railroad for Third Straight Year

Union Pacific was the top-performing U.S. Class 1 railroad in employee safety for the third consecutive year. Despite this designation, we still have work to do. The employee reportable injury rate, measured by the number of injuries for every 200,000 employee-hours worked, increased slightly to 0.79, 5 percent off the all-time record of 0.75 in 2016.

Two of our employees did not return home. We honor their memory by working toward an injury-free railroad. Union Pacific continues improving technology, enhancing processes and fostering a culture focused on operating safely.



*Omaha, Nebraska, Human Resources employees, from left, Shawna Smith, Stephanie Gier, Ann Nakamura, Kemy Bayemekessa, Tommy Kerr and Sarah Schindler celebrate the railroad's safety record with the traveling E.H. Harriman Safety Gold Medal trophy. The trophy travels to service units while Union Pacific remains the safest railroad.*

## COURAGE TO CARE AND SAFETY STAND DOWNS

Our employees are our eyes and ears when it comes to embedding safe behaviors. They identify risks, initiate action to mitigate those risks and work to keep each other safe.

Courage to Care, a voluntary commitment made by Union Pacific employees since 2012, empowers each person to look out for their peers and “stop the line” on any operation that could result in an incident. The company also pauses systemwide operations twice annually for safety stand downs, giving employees an opportunity to have candid safety discussions and share experiences to learn from each other.

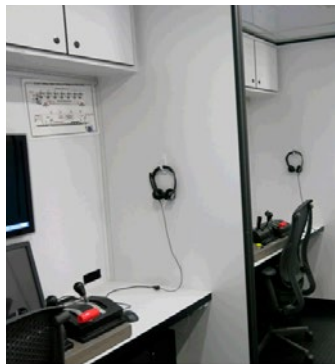
### SAFETY SPOTLIGHT

Karen Sepanski, a systems engineer in Proviso, Illinois, received Union Pacific's highest safety honor, the J.C. Kenefick Safety Award.

Sepanski is responsible for creating Total Safety Culture (TSC) processes and building a safety culture among employees at the Dolton Locomotive Shop and, later, Proviso Mechanical Shop. When she became TSC facilitator at Dolton in 2010, the shop's employee injury reportable rate was the system's worst. The team set a goal of zero injuries. Sepanski encouraged employees to speak up; handed out stickers and other materials to reinforce the goal; and created a recognition system. The Dolton team met its goal in 2012 and 2013. Sepanski said building trust among the team is critical to success.

In Sepanski's current role, she works with the Mechanical Department reviewing Standard Work processes for safety initiatives implemented systemwide. She also is responsible for ensuring facility inspections completed by contractors meet compliance standards.

*Since its inception in 1986, the J.C. Kenefick Safety Award annually recognizes a union employee who demonstrates outstanding job safety achievements. The award is named after our former Vice Chairman, CEO and President, John Kenefick, who guided the company into the era of deregulation after the passage of the Staggers Act in 1980. Under his leadership, Union Pacific more than doubled its size with acquisitions and gained access to the coal-rich Powder River Basin in Wyoming.*



*Mobile training trailers like this one are used to support PTC implementation across the Union Pacific system.*

### ENHANCING SIMULATOR TRAINING

Union Pacific uses nearly 39 full-size locomotive simulators to replicate the experience of operating a locomotive along our tracks. Locomotive engineers spent about 20,000 hours training on these simulators in 2017, up from 19,000 hours in 2016. We expanded real-time remote training, increasing simulator training accessibility.

We have five mobile training trailers, each equipped with seven work station simulators and 25 laptop simulators. This equipment is currently used to support PTC implementation. We trained 5,350 locomotive engineers and managers in 2017, up from the 1,200 trained in 2016.

Union Pacific uses more than 200 Remote-Controlled Locomotive (RCL) simulators to provide hands-on training for licensed remote operators. In their daily work, operators use a small computer console to direct locomotives in rail yards. Remote control operators spent more than 7,000 hours training on RCL simulators in 2017, up from 4,000 hours in 2016. We anticipate an increase in training hours in 2018 due to increased demand for new hire, conductor and RCL classes.

### MONITORING PERFORMANCE AND EMBEDDING SAFER BEHAVIOR

Union Pacific uses video technology across our locomotives and vehicles to ensure safety, security and situational awareness, as well as enhance locomotive engineers' and drivers' performance. On the vast majority of occasions, this proactive performance sampling validates and confirms our employees' professionalism. It also increases our in-depth understanding of how our people respond to different situations, enabling us to improve coaching and embed safer behaviors.

In 2017, we installed in-cab cameras inside 1,250 locomotives, increasing the total number of such cameras to more than 4,650. The in-cab cameras complement external-facing cameras, providing a complete view of incidents. We also integrate event recorder data, such as train speed, throttle position, brake settings and horn use.

By year's end, we installed approximately 2,700 DriveCams across our vehicle fleet with 6,000 more installations scheduled by the end of 2018. DriveCams are positioned below rearview mirrors and record 12-second video clips triggered by driving events, such as hard braking, swerving or excessive speed. DriveCam captures images from eight seconds before an incident occurs and four seconds afterward, enabling trained, third-party personnel to analyze the causes of such incidents.



## Public Safety

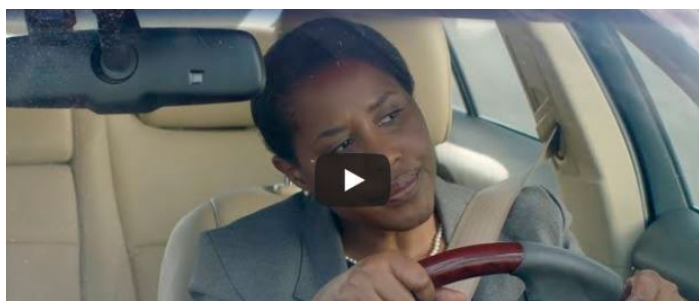
Keeping our communities safe involves proactive outreach to raise awareness and prevent risk-taking behavior near our tracks. We made significant progress in both areas through our UP CARES program.

### RAISING AWARENESS ACROSS COMMUNITIES AND MEDIA PLATFORMS

Union Pacific's rail safety campaign addressed the sobering consequences of risky behavior near railroad tracks, reaching more than 34 million social media users. We also reached out to schools, cities and professional driving companies. These organizations recognize train safety is a community concern and are a big part of the rail safety campaign's success.

#### Cross or Don't Cross – You Decide

You're running late to a high-stakes job interview or curfew when a train approaches a railroad crossing along your route. Do you hit the gas, beating the train across the tracks, or stop to let it pass? Union Pacific gave Facebook, YouTube and Hulu users the chance to decide in a series of online videos. Depending on which option users clicked – cross or don't cross – a specially tailored message appeared, reminding users their life is worth the wait to spend a few minutes letting trains pass.



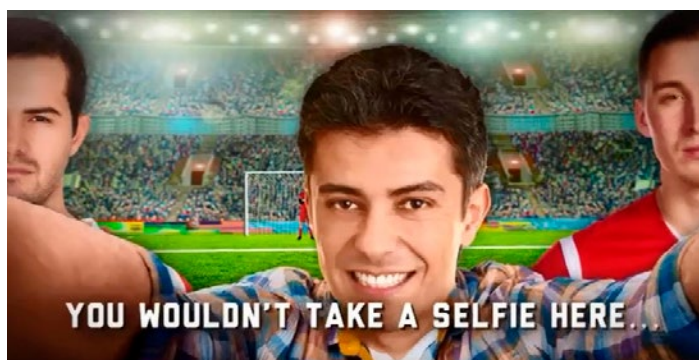
According to the Federal Railroad Administration (FRA), 94 percent of train-vehicle collisions can be attributed to driver behavior or poor judgment. These incidents are preventable. We encouraged social media users to share the Cross/Don't Cross videos with their friends and family.



Watch the videos and make your choice at [up.com](http://up.com).

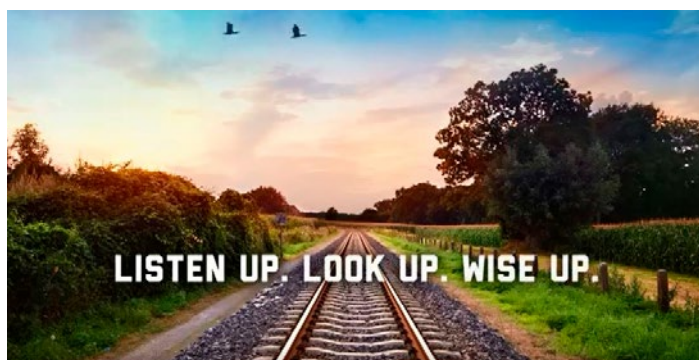
#### Photos Off the Tracks

In a second set of videos, Union Pacific used animation to address pedestrian safety and the dangers of taking photos on railroad tracks. The videos make it clear a young man and woman wouldn't take their photo in the middle of a busy highway, and then asks the question, "Why would you take your picture here?" A loud approaching train communicates taking pictures in both locations is a bad idea resulting in similar outcomes.



Two additional videos focus on selfies. While there are many unique and safe places to take selfies, railroad tracks are not among them.

Videos are available on [up.com](http://up.com).



#### Think You'll Hear a Train? Think Again.

An animated video helps dispel the myth that loud, enormous roaring trains warn people to move before they're hit. It compares soft, natural outdoor sounds to the sound of an approaching train. The video ends by explaining most of the noise is behind the lead locomotive – people may not hear it until it's too late.

Listen on [YouTube](https://www.youtube.com).

## AN AWARD-WINNING CAMPAIGN

Union Pacific's video safety campaign urging drivers to stop for trains at railroad crossings was awarded bronze at the 2017 Telly Awards, which recognize outstanding online and cable TV commercials. We launched the campaign in 2016 encouraging drivers never to race around the gates – their lives are worth the wait. This is the second consecutive year Union Pacific's safety campaign received Telly Award recognition.

## PROACTIVELY ENGAGING COMMUNITIES THROUGH UP CARES

Our UP CARES program recognizes the most compelling arguments for staying safe around railroad tracks are often those delivered face-to-face. During 2017, our employee volunteers delivered more than 380 rail safety presentations to more than 21,500 pedestrians, motorists and professional truck drivers across our 23-state network.

UP CARES also addresses risky driver behavior around railroad tracks. Union Pacific special agents partner with local and state police departments to observe driver behavior at railroad crossings. Officers stop drivers who risk their own safety and the lives of others. We carried out nearly 300 UP CARES operations of this kind, stopping and educating more than 4,100 drivers.



Locomotive Engineer Autry Climer discusses crossing safety with motorists at a UP CARES event near the Laredo Subdivision in Texas.

## SAFETY SPOTLIGHT

We use our social media channels to join the conversation surrounding large-scale events, such as the 2017 solar eclipse. Union Pacific reminded its Facebook and Instagram followers to safely enjoy the historic event, but to do so away from railroad tracks. The message reached more than 63,000 people.

While many paused to catch a glimpse of the eclipse, we never stopped our work Building America. To watch a video of the eclipse over Union Pacific's North Platte, Nebraska, Bailey Yard, visit <https://youtu.be/jWrlMlohUXU>.



## CELEBRATING FIRST-EVER NATIONAL RAIL SAFETY WEEK

Union Pacific celebrated U.S. Rail Safety Week in September, the first national observance week designated by the U.S. Department of Transportation and Operation Lifesaver – a nonprofit rail safety education organization. As part of our ongoing commitment to rail safety education, we hosted UP CARES events with law enforcement officers monitoring driver behavior at railroad crossings from inside a locomotive.

Union Pacific's Community Ties Giving Program provided financial support to the Illinois Association of Chiefs of Police Foundation for its rail safety week. Illinois continues to be among the top five states with the highest number of rail trespassing-related deaths. Funding was used to educate the public and increase awareness at railroad tracks.



Mechanical Maintenance Manager Albert Saffold distributes Rail Safety Week literature to Villa Park, Illinois, commuters.





*UP CARES operations promote public safety in our communities.*

## ANALYZING PATTERNS TO KEEP CROSSINGS SAFE

A small number of railroad crossings are responsible for many of the crossing-related accidents reported across Union Pacific's system. By analyzing these crossings' characteristics, Union Pacific can make tailored railroad crossing recommendations to help motorists and enhance safety.

Launched in 2015, our Crossing Assessment Process (CAP) delivers significant gains by leveraging this insight. For example, a Fairfield, California, railroad crossing had 25 reported incidents between 2010 and 2016. This included vehicles on the track, and motorists turning between or onto the tracks and improperly crossing. With the cooperation of local officials to implement CAP-recommended safety enhancements, no collisions occurred in 2017 and reported incidents were nearly zero.

## RESPONDING TO INCIDENT REPORTS

Union Pacific's Response Management Communications Center (RMCC) processes emergency and non-emergency calls from communities across our 23-state network. The RMCC team operates 24/7, responding to emergencies, reports of vehicles stuck on railroad tracks, criminal activity and other concerns. Drivers and pedestrians can contact the RMCC through the phone number posted near railroad crossings, **888-UPRR-COP (877-7267)**.

In 2016, CALEA awarded our RMCC team its second distinguished accreditation, recognizing an advanced standard of compliance across policy and procedures, administration, operations and support services. We are in a four-year cycle of accreditation maintenance and will qualify for our third distinguished accreditation in 2020. RMCC is one of 91 public safety communications centers recognized for emergency response and professional excellence in this way.

# Strengthening Our Communities

Union Pacific takes tremendous pride in our community relationships and efforts to improve the places where we live and work. We support communities through the Community Ties Giving Program, volunteer efforts and other forms of assistance. We supported more than 3,700 nonprofit organizations, donated \$18.4 million to community efforts and were members of more than 165 local civic organizations, such as chambers of commerce and economic development organizations.

Union Pacific's lines of communication are open to local and state agency officials, neighborhood groups and local citizens. Our public affairs representatives facilitate resources and address operations-related concerns reported directly, through our 24/7 community line and website. Communities are one of Union Pacific's key stakeholders, and we are committed to serving and investing in their futures.

## Charitable Giving in Our Communities

Union Pacific's charitable giving programs have helped thousands of nonprofit organizations achieve their missions since Union Pacific Foundation's creation in 1959. Evolving with the changing needs of the cities, counties and states we call home, the program was redesigned in 2017 and took on a new name – the Community Ties Giving Program.

From local grants to regional and key partnerships, our philanthropic outreach aligns with Union Pacific's long-standing commitment to building America. As we move forward, charitable giving will support initiatives in safety, workforce development and community spaces. The program will be fully implemented in 2018.



## SAFETY

Communities thrive when citizens feel safe. Union Pacific is committed to helping communities prevent and prepare for accidents and emergencies, ensuring residents get home safely at the end of each day. This reflects our commitment to employee safety and the communities through which our railroad passes. We prioritize funding for programs achieving the following objectives:

- Encourage safe behaviors and prevent accidents through education and awareness, particularly projects focused on rail, driver, bike and pedestrian safety.
- Eliminate risks and improve safe access to community spaces through infrastructure improvements. Examples may include signage, proper lighting and public trail upgrades.
- Prepare and equip citizens and emergency responders to effectively respond to incidents and emergencies, if or when they occur.
- Prevent crime and violent incidents through efforts addressing the root causes and seeking to mitigate their occurrence.

We donated more than  
**\$18 MILLION** to  
**3,800** nonprofit organizations  
in 2017

### TRAINING WITH TANK CARS

Union Pacific donated a tank car to the Roseville Fire Department in Roseville, California, for training purposes. The department's training center is a certified California Specialized Training Institute supporting training and education in a wide variety of areas, including emergency management, public safety, homeland security, hazardous materials, disaster recovery and crisis communication.



Work crews position and spot a donated tank car as it's loaded for transport to Roseville, California's, training facility.

## WORKFORCE DEVELOPMENT

For more than 150 years, Union Pacific has helped stimulate economic growth in cities and towns across the nation by training and providing employment to millions of workers. We believe a skilled workforce and access to jobs paying good wages are essential elements for a prosperous community. We prioritize funding for programs that seek the following objectives:

- Put youth on the right track by creating awareness of family-supporting jobs, such as those offered by Union Pacific, and building foundational skills, specifically in Science, Technology, Engineering and Mathematics (STEM)-related fields, as well as necessary technical and life skills training to begin a trajectory toward these careers.
- Raise awareness of, educate and prepare young adults for middle-skills jobs through community colleges, vocational and career training programs, workforce readiness initiatives and programs assisting with job placement and/or on-the-job experience.
- “Up-skill” the existing workforce by providing training and resources enabling workers to reach the next level in their careers.
- Provide training and mentorship for nonprofit professionals, helping them grow and advance their organizations.

### OPPORTUNITY WORKS INTERNS GET HANDS-ON RAILROAD EXPERIENCE

Union Pacific teamed up with Chicago Cook Workforce Partnership in Chicago, Illinois, to support the Opportunity Works internship program, giving young adults the resources needed to find a family-supporting job. The intense program began with fundamental skills training, followed by six weeks exploring a variety of Union Pacific careers, including Engineering, Mechanical, Marketing and Sales, and train crew opportunities.

Providing interns hands-on experience was critical to the program's success. We look forward to continued partnership with the Opportunity Works program to further expand local workforce development efforts and Union Pacific's future employee pipeline.



*The Opportunity Works interns visit the M19A Diesel Shop in Chicago to learn about the training, testing and maintenance of the Commuter Operations locomotive fleet.*

## COMMUNITY SPACES

Vibrant communities attract businesses, tourists and skilled workers. We seek to ensure citizens within our communities have access to special places celebrating cultural diversity, artistic expression, our natural environment and the social interactions enriching their lives. We believe such community spaces contribute to the distinct identity of cities and towns. We prioritize funding for programs and projects meeting the following objectives:

- Create, sustain or expand upon artistic and cultural experiences offered to a broad and diverse audience. For example, museums, theaters, libraries, concerts and lectures.
- Preserve and share a local community's unique history, including projects related to trains and/or Union Pacific history.
- Provide clean, safe and positive outdoor recreational and/or educational opportunities fostering an appreciation for our natural environment.
- Beautify neighborhoods and main street areas to improve livability, promote commerce and, ultimately, attract more residents, businesses and visitors.
- Plan for, create or enhance unique spaces reflecting a community's character and diverse needs and desires.



### IGNITING CHILDRENS' IMAGINATIONS

There's no better way to get children interested in reading than seeing their storybooks come to “life.” The Abilene Arts Alliance in Abilene, Texas, created a storybook sculpture garden based on Garth Williams' illustrative work. Each sculpture contains different scenes or characters from classic children's books, such as *Charlotte's Web* and *Stuart Little*. Since 2014, Union Pacific has donated more than \$37,000 to sponsor three sculptures: *Man in the Moon* (2014), *Duck on a Bike* (2015) and *Good Night Dinosaur* (2016).

*Union Pacific co-sponsored this Good Night Dinosaur sculpture with a Community Spaces grant.*



## LOCAL SUPPORT SPOTLIGHT

We supported dozens of local organizations whose work aligns with our philanthropic outreach goals in Safety, Workplace Development and Community Spaces. Some of those organizations include the following:

### Safety

- Larimer County Search and Rescue, Inc. in Fort Collins, Colorado, provides training to improve the skill sets of search and rescue members.
- Memorial Hermann Foundation in Houston, Texas, supports area teenagers and parents with its “Live Your Dreams” project which provides education regarding distracted and impaired driving.
- Utah Safety Council in Salt Lake City, Utah, is dedicated to car seat and passenger safety with its “Buckle Up for Love” program.

### Workplace Development

- Alex Foundation in Dermott, Arkansas, supports STE+AM (Science, Technology, Engineering, Art, Architecture and Math) programs for area 8th- and 9th-grade students.
- Job Train, Inc. in Menlo Park, California, empowers residents to achieve self-sufficiency with its job training and placement programs.
- DePaul University in Chicago, Illinois, brings digital literacy to underserved youth with its mobile design lab.

### Community Spaces

- Wichita Grand Opera, Inc. in Wichita, Kansas, supports live, outdoor performances to enrich the lives of Kansans.
- Deming/Luna County MainStreet Program, Inc. in Deming, New Mexico, aims to recapture the heritage and charm of the past while incorporating modern technology to make Main Street a destination with programs including The Deming MainStreet Farmers and Crafters Market.
- Lower Columbia Estuary Partnership in Portland, Oregon, provides local residents opportunities to care for the Columbia River by adding native plants and removing invasive species.

The Community Ties Giving Program proudly supports local United Way organizations across our operating regions. Union Pacific has a longstanding partnership with United Way that we believe is a vital resource and contributor to communities across the country.

## Making a Difference in Our Communities

Union Pacific's business is inextricably linked with communities, and we strive to tackle problems, find solutions and make positive impacts. This includes hiring efforts and responding in times of crisis.

## LOCOMOTIVE ENGINEER RESCUES 300 IN HURRICANE HARVEY'S WAKE

Hurricane Harvey wreaked havoc in Texas, leaving mass destruction and many people stranded in their homes. After watching the news, Union Pacific Locomotive Engineer Eddie (Bubba) Bedre used his vacation time and fishing boat to take action. He and other volunteers spent 30 hours maneuvering the waters and saving approximately 300 people.

Once the immediate need ended, Bedre raised more than \$2,000 in donations to help low-income families rebuild their homes. Union Pacific donated \$325,000 to support Hurricane Harvey relief efforts, too. Those funds were provided to the American Red Cross, Houston Mayor Sylvester Turner's Hurricane Harvey Relief Fund, our “Friend to Friend” employee support network and the Give PLUS program, matching employee donations.



*Union Pacific Locomotive Engineer Eddie Bedre used his fishing boat to transport people to safety.*

## PEER SUPPORT TRAINING PREVENTS POSSIBLE SUICIDE

Union Pacific employees are trained to be aware of their surroundings. But Denver, Colorado, Arc Welder Sergio Flores believes he was in the right place at the right time. He noticed a woman lying on the tracks. At first, she refused to move; however, Flores eventually was able to get her to walk to the depot with him. The trained Peer Support volunteer used her phone to call the National Suicide Prevention Hotline.

Union Pacific's Peer Support mission is to develop a network of volunteers who provide friendship and support services to co-workers involved in critical incidents, either on the job or in their personal lives. Each year, Peer Support hosts a systemwide Suicide Awareness Day at Union Pacific.



*Denver, Colorado, Arc Welder Sergio Flores is a trained Peer Support volunteer.*



## INSPIRING THE NEXT GENERATION OF ENGINEERS

Finding a way to get students interested in STEM-related careers is a high priority for Union Pacific. Partnering with the Oregon Museum of Science and Industry (OMSI) and a Portland State Engineering student, we participated in the Teen Science Alliance, a program challenging Portland-area high school students to combine creativity and science. Three teams were given an LED light, computer software and other resources, such as wire and Velcro. The goal was to create a new product improving the quality of life. Once complete, the students had to present their projects, sharpening their communication and presentation skills.

Union Pacific is proud to sponsor STEM-related programs like those found at OMSI. Since 2011, we have donated more than \$65,000 to the museum through the Community Ties Giving Program.



Students become “thinkaneers” at the Teen Science Alliance, funded by Union Pacific.



UP consultant Mary Guthrie, left, and Director of Public Affairs Sara Thompson Cassidy, right, present Cheyenne Mayor Marian Orr a commemorative golden spike at the city’s 150th anniversary celebration.

## CELEBRATING OUR RAILROAD ROOTS IN CHEYENNE

Union Pacific joined the City of Cheyenne, Wyoming, to celebrate its 150th anniversary with a series of summer events in 2017. The city was founded in 1867 when men began building Union Pacific tracks west, as part of the Great Race to build the transcontinental railroad. Other community institutions formed with the railroad’s arrival include Cheyenne Regional Medical Center, which began as a Union Pacific tent hospital, and a military base in 1867. First named Fort D. A. Russell, and later renamed F. E. Warren Air Force Base, it is the oldest continuously active military installation within the U.S. Air Force.

The celebration also included Cheyenne Frontier Days, which celebrated its 120th anniversary and featured displays commemorating Union Pacific’s role starting the event. Union Pacific celebrates the shared history of Cheyenne and many communities that grew up and developed together. In January 2018, the city held its final 150th anniversary event and buried a time capsule, which included Union Pacific’s 2016 Building America Report and “Nothing Like It in the World” by historian Stephen Ambrose. The time capsule will be opened during the city’s bi-centennial in 2067.

Today, Cheyenne serves as a major crossroad to the West for Union Pacific. It also is home to our Steam Shop and historical locomotive fleet, which includes UP No. 4014 – The Big Boy – and UP No. 844.

## UNIVERSITY SPOTLIGHT

Students at the University of Nebraska and University of Michigan are helping Union Pacific develop new technology called “smart monitoring” to aide bridge inspectors. More than 95 percent of our roughly 18,000 bridges are inspected a minimum of twice annually by a specially trained two-person inspection team, exceeding federal requirements. Bridges less than 10 years old and without defects are inspected once annually. This technology uses sensors to collect data and is designed to alert us about potential problems between inspections.



Union Pacific bridge inspectors discuss testing results with University of Nebraska students.

## Matching our Employees’ Generosity



Members of Union Pacific’s Latino Employee Network (LEN) participate in a day of service at the San Antonio, Texas, Food Bank.

Union Pacific’s GivePLUS program matches employee donations to nonprofit organizations, dollar-for-dollar, and supports employees who volunteer their personal time by providing matching grants. Our annual employee matching limit was \$25,000 in 2017. We matched our employees’ generosity and donated nearly \$3 million to nonprofit organizations improving our communities, a \$600,000 increase from 2016.

# Engaging Employees

Union Pacific's dedicated employees are passionate about their role building America. We strive to provide them fulfilling careers and professional development opportunities, helping us serve customers with excellence.

## Embracing Employee Needs

Union Pacific draws thriving talent, energizes current employees and develops them to carry out our mission while leading the transportation industry into the future. Key engagement initiatives revolve around our culture, workplace relationships, employee rewards, job responsibilities and personal growth opportunities.

### EMPLOYEE BENEFITS

We offer a comprehensive benefits program including medical insurance, educational assistance and a 401(k). Benefits vary based on the applicable collective bargaining agreement or an employee's non-union status.

Work schedules required to run our railroad's 24/7 operations can be challenging, and employees often need extra support caring for loved ones. The Bright Horizons Care Advantage™ database refers employees to supportive care providers and services, such as:

- Center-based and in-home child care.
- Elderly care.
- Pet care.
- Housekeeping.
- Tutoring and homework help.

### LABOR AGREEMENTS

Union Pacific works with 14 major rail unions representing approximately 85 percent of roughly 42,000 full-time employees.

National labor agreements became subject to modification most recently on Jan. 1, 2015. In the last quarter of 2017 and through May 2018, Union Pacific reached tentative agreements with the following major unions, which have ratified them:

- Brotherhood of Locomotive Engineers and Trainmen.
- Brotherhood of Railroad Signalmen.
- Brotherhood Railway Carmen.
- International Association of Sheet Metal, Air, Rail and Transportation Workers – Transportation Division including Yardmasters.
- National Conference of Firemen and Oilers.
- Transportation Communications International Union.
- International Brotherhood of Electrical Workers and International Brotherhood of Boilermakers.
- The Brotherhood of Maintenance of Way Employees
- International Association of Sheet Metal, Air, Rail and Transportation Workers - Mechanical

These agreements were ratified by a wide margin of employees, on average by nearly 80 percent of members.

Following final and binding arbitration in May 2018, The Brotherhood of Maintenance of Way Employees and International Association of Sheet Metal, Air, Rail and Transportation Workers - Mechanical also are under an Arbitrated Agreement that follows the industry pattern agreement, bringing 95 percent of Union Pacific agreement professionals under new agreements.

The International Association of Machinists and Aerospace Workers is the sole union without an agreement, and negotiations with that union remain under the jurisdiction of the National Mediation Board.

### AUXILIARY WORK AND TRAINING STATUS (AWTS)

Shifts in business demand resulted in temporary reductions to train and yard service causing employee furloughs. Approximately 75 percent of all Train Engine and Yard (TE&Y) employees were eligible to be covered under AWTS agreements providing limited benefits, which must also be approved by local unions.

AWTS agreements provide up to eight work or training days per month, and continue full health care benefits and service months contributing to Railroad Retirement. Employees continue training to sharpen their skills and prepare for full-time employment when customer demands increase.

POPULATION (TOTAL COMPANY)		SENIOR MANAGEMENT	
Approximately	42,000	Female	21%
Traditionalists (born before 1946)	<1%	Male	79%
Baby Boomers (born 1946-1964)	24%	Asian	2.5%
Generation X (born 1965-1981)	52%	Black	7.5%
Millennial (born 1982-1997)	24%	Caucasian	82.5%
Generation Z (born after 1998)	<1%	Hispanic	6.5%
		Native American	1%

## UNION PACIFIC RECOGNIZES 50-YEAR EMPLOYEES

From the turbulent 1960s, to the railroad industry's increased competition and regulation in the '70s, to the 21st-century railroad renaissance, Union Pacific's 50-year employees have experienced it all during their half-century on the railroad.

Employees recognized were:

**Larry Benoit**, locomotive engineer, Houston Service Unit

**Palmer Hewlett**, locomotive engineer, Los Angeles Service Unit

**Joseph "JJ" Keigley**, conductor, Metra

**Jack Lovell**, analyst systems and methods-Information Technologies

**Larry Picker**, locomotive engineer, Portland Service Unit

**Philip Ricchiazzi**, locomotive engineer, Los Angeles Service Unit



*A May 2017 ceremony at Union Pacific Center recognized the 50-Year employees for their years of service.*

## Developing Employees

The work of building, maintaining and operating a railroad is challenging. Union Pacific's commitment to employee training and development is vital for cultivating the high-quality workforce we need. It also plays a critical role keeping our employees safe and ensuring we operate ethically.

2017 TRAINING		
	Nonagreement	Agreement
Total Hours	334,433	2,770,414
Number Employees	6,059	38,317
Avg Hours/Employee	55.2	72.3

2017 RETENTION		
	Operations Management Trainee	Field Management Trainee
2013	44%	67%
2014	44%	72%
2015	44%	61%
2016	60%	73%
2017	93%	87%

## DEVELOPING SKILLS

Training and development focus on setting goals and achieving great results. Union Pacific believes how employees accomplish their work is equally important as what they accomplish. Our core competencies foster a culture of performance and growth supporting our vision, mission and values. In addition to work-related skills, we develop employees' capabilities in eight core competencies:

- Building relationships and influencing others.
- Handling adversity.
- Confronting problems with courage.
- Leading teams.
- Embracing change.
- Making effective decisions.
- Acting strategically.
- Focusing on customers.

We offer skill development opportunities for employees at all levels. These include:

- New Employee Onboarding Program – Courses on communication and industry-specific training through an interactive, instructor-led learning experience.
- Skill Development – Technical, communication, safety and environmental courses.
- Managerial and Leadership Development – Management and leadership courses helping employees grow and develop.
- Transitioning Managers – Courses helping newly promoted managers lead teams.
- Transportation Operations Training – Operational excellence courses strengthening employee skills and training for superior service.
- Field Management and Operations Management Training Programs – Programs preparing employees for frontline management positions within the Operating Department.
- Emerging Leaders – Leadership programs maintaining a strong pipeline of future leaders, ranging from day-long training courses to 10-month programs. Ongoing, self-led learning tools fostering employee development also are available.



## Embedding an Ethical Approach

Union Pacific's brand and business stem from employees' character, people with whom we choose to do business and the decisions we make. Providing the training and tools needed to help employees make the right decisions is a priority.

Our policy on Ethics and Business Conduct, *The How Matters*, explains our expectation of ethical conduct, prohibiting offensive remarks and sexual harassment, among other violations. We have a zero tolerance policy on inappropriate behavior involving Equal Employment Opportunity (EEO) and retaliation matters, and encourage employees who witness behavior they believe violates EEO policy to report the incident. Union Pacific employees operate under the following high ethical standards:

- Honesty – Being truthful when dealing with customers, suppliers, shareholders and fellow employees.
- Fairness – Treating everyone fairly.
- Integrity – Voicing concerns when we believe our company or colleagues are not acting ethically or complying with the law.
- Respect – Maintaining a foundation of trust and respect with colleagues, customers, regulators, suppliers and other stakeholders.
- Loyalty – Ensuring no employee is, or appears to be, subject to influences, interests or relationships that conflict with the company's best interests.
- Accountability – Holding ourselves, peers and customers to the company's high ethical standards.
- Adherence to the law – Complying with all laws.
- Compliance with policies – Complying with the letter and spirit of company policies.

## ETHICS AWARENESS

Union Pacific educates employees about ethics and our high ethical conduct expectations throughout the year. We focus on *The How Matters* and the premise that how we do our jobs is as important as what we accomplish. Published articles on our employee news website, periodic ethics bulletins and mandatory training modules remind employees of Union Pacific's high ethical standards.

We held our fourth annual Ethics Awareness Week, a companywide initiative focusing on our values and business conduct required of all employees. Throughout the week, we published ethics and compliance articles on our employee news website. Topics included guidance on when and how an employee should use the UP Values Line, a 24/7 source to confidentially report business conduct issues, as well as our new Information Governance Policy and training reminders. We also distributed *The How Matters* badge cards for employees to attach to their Union Pacific ID. The cards include a list of employee resources, such as the UP Values Line, Safety Hotline and Employee Assistance Program Helpline phone numbers.

## EMPLOYEE SPOTLIGHT: NEW TOOL A MEASURE OF SUCCESS

A new measurement tool designed to improve accuracy and reduce slips, trips and falls is available systemwide thanks to the hard work of an Illinois Signal Maintainer. Brian Czerwinski was performing annual shunt testing when he came up with the idea. Shunt testing ensures a railroad crossing's computer is properly calibrated to lower crossing arms when an oncoming train is at a predetermined location. Czerwinski worked with his local Total Safety Culture (TSC) Facilitator, Kevin Crady, to research and develop the concept. It took several iterations before the duo found a successful solution. The new wheel allows employees to have better situational awareness because they don't have to focus on keeping the wheel from falling off the track.



From left, TSC Facilitator Kevin Crady and Signal Maintainer Brian Czerwinski with the new measuring wheel.



Omaha-area Market Development and Sales Center employees spend an afternoon volunteering for Habitat for Humanity, building a home with products our customers ship daily on Union Pacific trains.

# Embracing a Diverse and Inclusive Workplace

Union Pacific recruits talented individuals dedicated to our mission of service and passionate about performing to the best of their abilities. We are committed to diversity; we recognize and value that people come from all backgrounds and walks of life, and embrace those with cognitive diversity.

Attracting, acquiring and maintaining a diverse workforce provides access to the skills and character we need to foster innovative ideas and drive optimal business growth. Drawing on different experiences and expertise is critical for strategic decision making, problem-solving, leadership development and creativity.

Union Pacific makes great efforts to increase diversity through talent acquisition and helping employees from all groups launch and grow their careers within the company. Our eight Employee Resource Groups (ERGs) are critical to supporting the company's diversity and inclusion strategy by raising awareness and providing an environment where all employees can realize their potential.

We still have work to do. We are committed to improving and strengthening performance to further build an inclusive workforce reflecting the diverse markets and communities we serve.

## OUR DIVERSITY POLICY

Union Pacific employees have the fundamental right to fair treatment within a discrimination-free workplace. We create a work environment that respects and values differences, which is essential for employees to reach their fullest potential.

We are committed to a work environment free of offensive behavior regarding a person's race, color, national origin, religion, gender, sexual orientation, age, gender identity, veteran status or disability. This includes offensive behavior directed at employees, customers, visitors to company facilities and others who employees may contact during the normal course of work.

## INNOVATION STATION

Diversity of thought is critical to our success. At Union Pacific, we believe innovation is any change that makes us better. It can be a big idea leading to large-scale improvement or something smaller that impacts an employee's day-to-day operations. In 2017, we launched Innovation Station – an idea pipeline. The mobile-friendly platform is open to all employees and can be used on any company computer, smartphone or personal device. It's designed to crowdsource ideas and solutions. The best ideas move forward and receive funding for testing and potential implementation.



Just as important as embedding innovative thinking into our culture is understanding that not all ideas are going to be successful. We know some concepts take more time to find the right solution.

In its first year, Innovation Station hosted four campaigns asking employees for their feedback on specific initiatives ranging from safety to track maintenance. More than 250 employees submitted ideas for the safety campaign alone. Of those, 16 made it to the next round for testing and potential implementation.

## EMPLOYEE RESOURCE GROUPS

Union Pacific's Employee Resource Groups (ERGs) are nurturing networks promoting a diverse workplace where everyone does their best work. Each ERG has an executive sponsor directing the leadership team's attention to concerning issues. ERGs support their members, educate other employees and embrace the communities we serve.

More than 2,500 employees are involved in one or more ERGs, which include:

- Asian Employee Resource Organization (AERO).
- Black Employee Network (BEN).
- LGBT Employee Network (BRIDGES).
- Council of Native American Heritage (CONAH).
- Latino Employee Network (LEN).
- A Women's Initiative – Lead, Educate, Achieve and Develop (LEAD).
- Emerging Professionals Network (UP Ties).
- Union Pacific Veterans Network (UPVETS).

## PEOPLE, PURPOSE, PASSION

Several Union Pacific ERGs held conferences in 2017, creating an environment for passionate employees to network, hear from senior executives, participate in community service and share ideas.

LEN held its seventh annual conference in Denver. Attendees' enthusiasm for progress and dedication to bridging cultural differences were evident as they discussed ways to eliminate stereotypes and help flourish the creative teamwork Union Pacific's vibrant Latino culture encapsulates.

At the BEN conference in Houston, Texas, speakers encouraged employees to focus on bettering one another at work and in their communities through innovation and engagement.

LEAD participants learned what it means to build up one another professionally and personally at their Omaha, Nebraska, conference.

AERO members also met in Omaha, focusing on the power of employee engagement and how each person has a role building an engaged team at Union Pacific.



*Union Pacific leaders describe their career paths during a LEAD panel discussion.*



*Isabel Vela receives her Building America patch after completing a day as a "Girl of Steel."*

## GIRLS OF STEEL EARN RAILROAD SCOUTING PATCH

Omaha, Nebraska,-area Girl Scouts earned their Building America patches after spending a day with Union Pacific as "Girls of Steel." Union Pacific hosted the one-day event in partnership with LEAD as part of the Girl Scouts' "Build Your Future: Full STEAM (Science, Technology, Engineering, Arts, Math) Ahead" annual theme.

Girls spent the day coding emojis, animating their names and building miniature bridges, as well as visiting Union Pacific's Harriman Dispatching Center and Council Bluffs, Iowa, train yard. LEAD members enjoyed the opportunity to connect with Girl Scouts and discuss potential career paths the railroad offers.

## ENCOURAGING WOMEN TO SEE THEMSELVES AT UNION PACIFIC

Women make up approximately 5.5 percent of Union Pacific's total workforce and represent one of the company's biggest diversity opportunities. At the same time, businesses such as ours face a growing shortfall of skilled trade workers due to fewer men and women choosing to learn a trade.

Union Pacific hired more than 10 percent more women into our Operating Management Trainee program, 27 percent versus 16.7 percent in 2016. We continue recruiting and encouraging women to see themselves succeeding at Union Pacific. Union Pacific's [careers website](#) featured stories of women working in Transportation, Engineering, Mechanical and Technical teams. We partnered with women's skilled trade organizations, women's veterans groups, technical and trade schools, and women's affinity groups at 28 universities. Union Pacific shared opportunities with women who possess skilled trade experience.



*20-year railroad veteran and General Superintendent Tami Johnsen in the Council Bluffs, Iowa, train yard where she has held several positions throughout her career.*

## BALANCING CAREER AND FAMILY

Railroading is in Tami Johnsen's blood. The third generation railroader began her Union Pacific career at age 20 as a train dispatcher before moving into Operations. Fast forward 20 years, and Johnsen is once again working in Omaha's Harriman Dispatching Center; this time, as general superintendent managing dispatchers who coordinate train movement across Union Pacific's 12,000-mile Northern Region. She is the second female to hold the role in our 155-year history.

Johnsen describes herself as driven and focused on learning something from every experience. The mother of three says despite a demanding career, she makes time for family. One of their favorite pastimes is railroad trivia on car trips, quizzing her children on anything from "What kind of train is that?" to "How long does it take a train to stop?"

Many Union Pacific employees consider Johnsen a role model. She enjoys talking to co-workers and finding solutions to challenges they may face. To read more, visit [up.com](#).



# Keeping Employees Healthy, Happy and Well

We are determined to help employees stay healthy. Our wellness program helps employees take charge of their well-being with tools to manage physical and mental health. Available resources include coaching, access to fitness centers, health education programs and screenings, and flu shots.

The System Health Injury Protocol program assists employees who may be at risk for injury because of low fitness levels. It provides access to personal training and nutrition consultations, helping employees achieve their fitness goals. When employees sustain injuries, Union Pacific's Return to Work program offers meaningful work within their physical capabilities. We also provide education and assistance to help with substance abuse, staying alert and stress-related conditions.

Other employee wellness programs include:

- Personalized health coaching, helping employees and their spouses manage stress, depression, smoking, diabetes, nutrition education and weight management.
- Employee Assistance Program, offering all employees and their families counseling and referral services for personal or work-related problems.
- System health facility program, giving employees access to more than 5,000 gyms located near Union Pacific work sites, including gyms from industry leaders such as Lifetime Fitness, Anytime Fitness and Gold's Gym.
- Incentives encouraging annual wellness assessments and physicals for non-union employees.

## WELLNESS CHALLENGE SPOTLIGHT

Launched in 2013, the Worksite Wellness Challenge recognizes Union Pacific locations adopting world-class wellness programs. All sites are evaluated and scored on wellness and safety education objectives. Points are awarded based on employee engagement levels. Approximately 67 percent of Transportation and Mechanical work units achieved platinum or gold status during the 2017 challenge.

## SPREADING BEST PRACTICE ON PEER SUPPORT

A central role in Union Pacific's approach to well-being is played by peer support networks, with trained employees offering confidential advice and guidance to their colleagues. This strengthens bonds between our people and builds a sense of community within Union Pacific, providing support from those with an inherent understanding of the rail industry.

Peer support leadership conferences in California, Missouri and Texas enabled networking, sharing best practices and building momentum for a vital part of our well-being support structure. Union Pacific brought together 350 volunteers from regional peer support programs to provide invaluable support to those facing crises at home or work.

## EMPLOYEE ASSISTANCE PROGRAM

We operate a 24/7 Employee Assistance Program helpline, providing access to trained employee volunteers. These volunteers are equipped to help colleagues work through the emotional impacts of life-changing events. Support is entirely confidential and can provide a bridge to professional support services, where needed.

## RAILROADERS STEP TOWARD A HEALTHY FUTURE

Six ERGs challenged their members to get active, resulting in employees taking more than 8 million steps in November. The challenge helped participants discover various methods to achieve their fitness goals, such as taking the stairs, a lap around the office, parking further away, stretching or enjoying a lunchtime walk.



*Black Employee Network health and wellness committee co-chairs Stacey Rhodes and LaVersia Spencer display their fitness trackers.*

## EMPLOYEES ACTIVELY SERVING

Union Pacific's Support our Troops initiative encourages employees to send messages to our railroad's uniformed soldiers on active duty around the world. We sent an American flag, messages and care packages to our 63 employees stationed overseas on Memorial Day. This marked the 14th year we supported troops in this way.



*UP No. 1943 at its Texas unveiling ceremony in San Antonio, Texas.*

## UP NO. 1943 THE SPIRIT LOCOMOTIVE SALUTES VETERANS

Union Pacific unveiled its 16th commemorative locomotive in our 155-year history – UP No. 1943 The Spirit. The locomotive honors the United States' armed forces, and the men and women filling their ranks. Created in collaboration with Union Pacific's veterans, the locomotive illustrates the railroad's connection to the thousands of veterans who helped build America through the centuries.

The locomotive was unveiled in San Antonio, Texas, and proceeded on a Salute to the Military tour, which included stops in Arkansas, Louisiana, Kansas, Nebraska, Wyoming, Nevada and California.

Read more about No. 1943 and its design's symbolism at [up.com](http://up.com).



*Lt. Col. Kevin Mantovani, left, with an Afghan Air Force member and a Mi-17 helicopter during a tour of duty in Afghanistan.*

## DOING OUR PART FOR A MORE INNOVATIVE MILITARY

Union Pacific hosted Lt. Col. Kevin Mantovani as part of an exclusive Secretary of Defense Executive Fellows Program (SDEF). Over the course of several months, Mantovani absorbed a comprehensive overview of our company culture and effective ways to apply what he learned to his overseas assignment with the U.S. Air Force.

He spent time with employees working in Transportation, Information Technologies, Engineering, and Marketing and Sales. At the conclusion of his Union Pacific experience, Mantovani provided feedback to Pentagon senior leadership about our innovative approaches using big data analytics, artificial intelligence and machine learning. However, Mantovani said what impressed him most is the way our employees build safety and efficiency into their daily lives.

Union Pacific was one of 15 Fortune 500 companies to host a SDEF participant.

# Preserving the Environment

A healthy environment is an essential foundation for a strong country – and a vibrant economy. Our vision of Building America involves protecting and strengthening this foundation.

Railroads are one of the most fuel efficient means of transportation, generating fewer carbon emissions than long-haul trucks or air transport. Moving freight on trains also reduces traffic gridlock on America's overtaxed highways and carbon emissions from idling vehicles.

We move freight in an environmentally responsible way, enabling sustainable economic growth, but we still recognize the importance of not being complacent about our operations' impact. As the world seeks to improve sustainability, we are doing our part to reduce our carbon footprint and help our customers do the same.

## 2017 Highlights, Challenges and Opportunities

### GREEN RANKING

Union Pacific ranked No. 61 among all U.S. businesses in Newsweek's Green Ranking, an improvement from our position as No. 81 in 2016.

On average, trains are four times more fuel efficient than trucks. That means moving freight by rail instead of truck reduces greenhouse gas emissions by 75 percent.<sup>1</sup> Those emissions are directly related to fuel consumption. On average, Union Pacific moved a ton of freight 465 miles on a gallon of diesel fuel. If 5 percent of freight switched from truck to rail, 800 million gallons of fuel could be saved.

Union Pacific earned an A- rating on the CDP's Climate Change Survey in 2017. We are proud of our achievements, resulting from the 10th consecutive year of submitting climate change data to CDP.

## Our Approach to Environmental Management

Union Pacific's goal is to be a leader in moving goods in a fuel-efficient and environmentally responsible manner. Environmental Management policies and procedures provide a pathway for the company to meet or exceed applicable environmental laws and regulations. Our environmental management efforts are based on the following strategic pillars:

- Prevention – Acting to reduce environmental damage from operations, including carbon emissions and climate impact.
- Preparedness – Working with customers and communities to prepare an effective response to future environmental issues.
- Response – Responding to emergencies involving environmentally sensitive materials to minimize health, environmental, operational and financial impact.
- Recovery – Restoring the environment from contamination for which Union Pacific is responsible.

Union Pacific's Environmental Management System improves processes and tracks performance. We strive to improve our performance by investing in technology, maintaining equipment and training employees in environmentally responsible behaviors.

Every Union Pacific employee must commit to preventing pollution, continuously improving and complying with all regulations, according to the company's [environmental policy](#) signed by Chairman, President and CEO Lance Fritz.

Our Environmental Management Group (EMG) oversees environmental compliance and is integrated into daily operations. EMG rigorously plans, coordinates and communicates environmental requirements and best practices. It also engages employees in our Environmental mission and vision.

<sup>1</sup>Source: [Association of American Railroads](#)



A Union Pacific train travels along Hood River in Oregon.



## ENVIRONMENTAL RISK MANAGEMENT

Union Pacific's vice president of Safety is directly responsible for the company's environmental progress. He reports to the Chairman, President and CEO regarding environmental compliance. Additionally, the vice president of Safety annually reports directly to the board of directors on environmental issues.

Continuous improvement in achieving the company's fuel efficiency goals, which directly impact our emissions, is tied to compensation as a result of our performance review process.

## COMPLIANCE

Union Pacific is subject to federal and state environmental statutes and regulations related to public health and environment, which are administered and monitored by the EPA and other federal and state agencies. Some of the primary laws governing rail operations include:

- Resource Conservation and Recovery Act, regulating solid and hazardous waste management and disposal.
- Comprehensive Environmental Response, Compensation and Liability Act, governing contaminated property cleanup.
- Clean Air Act, regulating air emissions.
- Clean Water Act, protecting the country's waters.

## OUR ENVIRONMENTAL PARTNERS

We collaborate with a range of partners, identifying opportunities to reduce our environmental impact and manage our land responsibly. Organizations with which Union Pacific collaborates include:

- GreenBiz Executive Network, a peer-to-peer learning forum for sustainability executives from a diverse group of some of the world's largest companies.
- The California Council for Environmental and Economic Balance, a nonprofit, nonpartisan coalition of industry, labor and public leaders working to solve the state's most pressing environmental policy problems.
- The Association of American Railroads Environmental Affairs Committee, a rail industry forum sharing best practices.

## Environmental Risks

Extreme weather results in harsh working environments for employees, increased rail maintenance costs and negative service impacts. Blizzards, floods and hurricanes can lead to slower train speeds, service interruptions, track damages and recovery costs.

Our company acts to strengthen our network's resiliency from potential effects of extreme weather events. We have established emergency response procedures, which include moving required resources to regions likely to be affected. We are pursuing improvements that further increase our infrastructure's resiliency, including mitigating the impact of potential rise in sea level.

Union Pacific educates public and elected officials about the environmental benefits of moving goods by rail. We work closely with public agencies to advance emissions reduction technology while delivering immediate benefits in improved air quality. As part of this collaboration, we strategically position our lower-emitting locomotives in parts of the country where communities fail to meet federal and national air quality standards.

For additional information on how climate change could have a material adverse effect on operations results, financial conditions and liquidity, see the risk factors in Union Pacific's [Annual Report Form 10-K](#) and [CDP filings](#).

## RALLYING FROM HURRICANE HARVEY

In August, more than 27 trillion gallons of rain fell over Texas – the most rainfall ever recorded in the continental U.S. from a single rain event. The Category 4 hurricane had a diameter of 280 miles with winds of 130 mph during its first landfall. At the height of the storm, Union Pacific had 1,750 miles of track out of service.

As we braced for impact, Union Pacific activated its Hurricane Response Plan, which includes dispatching emergency response teams, modifying our schedule, preparing surge resources (ie. Engineering work crews, pumps, generators, locomotives and ballast) and moving equipment to higher ground. It's because of these measures and the dedication of our employees that we were able to repair 97 percent – all but 50 miles of track – in just 10 days, allowing us to serve our customers and deliver goods vital to rebuild. Most importantly, the work was completed without injury.



*A webcam image shows the devastation caused by Hurricane Harvey in Houston's Englewood Yard.*

## GREENHOUSE GAS (GHG) EMISSIONS PERFORMANCE

Union Pacific locomotives produced 10,216,978 metric tons of GHG emissions, up from 9,913,870 metric tons in 2016 due to increased freight volume. Biomass source emissions were 125,359 metric tons, including 41,456 metric tons or 33 percent from renewable fuels. This is an increase from 119,872 metric tons in 2016, which included 34,026 metric tons or 28 percent from renewable fuel.

Scope 3 emissions from employee business travel totaled 18,466 metric tons, a decrease from 18,603 in 2016. Employee business travel includes rental car fuel and commercial air travel. We engaged with 31 percent of suppliers, based on Union Pacific's spend, to identify GHG emissions. Non-fuel suppliers produced Scope 3 emissions totaling 304,990 metric tons, compared to 269,386 in 2016. Scope 3 emissions from Union Pacific's largest fuel suppliers' extraction, production and transportation were 2,615,256 metric tons, up from 2,536,657 in 2016.

## VERIFICATION OF UNION PACIFIC GHG INVENTORY

Union Pacific worked with independent organizations to ensure an accurate annual GHG inventory and emissions calculation. Cadmus Group assisted with methodology to accurately measure and calculate GHG inventory. GHD Limited verified our GHG emissions inventory.



## Fuel Efficiency

We strive to appropriately balance financial returns, environmental performance and social commitment. Fuel efficiency is a critical part of Union Pacific's sustainability approach. Diesel fuel accounts for nearly 14 percent of our operating expenses.

Fuel efficiency and carbon emission reductions fluctuate based on business volumes and commodity mix. Fuel efficiency improves when trains move heavier shipments. We set our best-ever fuel consumption rate, improving by 1.7 percent, compared to the 0.8 percent improvement in 2016.

This marks the end of a three-year commitment to improve our fuel efficiency by 0.5 percent annually. Union Pacific surpassed the goal by 0.6 percent as a result of the strategies outlined below.

We're proud of the fact that since 2000, we've saved nearly 2.9 billion gallons of fuel, and our work is ongoing. Union Pacific set a new goal to further reduce locomotive consumption by 1.5 percent through 2020.

NEARLY  
**2.9** BILLION  
GALLONS  
of fuel saved since  
**2000**

## WORKING WITH CUSTOMERS TO REDUCE AND MEASURE EMISSIONS

Customers seeking to reduce carbon emissions can calculate savings from rail by using Union Pacific's online [Carbon Emissions Estimator](#). Many also receive annual emissions savings estimates compared to moving goods by truck. Our customers eliminated an estimated 31 million metric tons of GHG emissions by choosing rail over truck transportation.

## INVESTING IN NEW LOCOMOTIVES

Union Pacific acquired 28 new locomotives meeting the EPA's stringent Tier 4 emissions standards. Tier 4 standards reduce particulate emissions from diesel locomotives by as much as 90 percent and nitrogen oxide emissions by as much as 80 percent. We plan to purchase additional Tier 4 locomotives in 2018.

We invested roughly \$8.8 billion in purchasing more than 4,600 new locomotives since 2000. These locomotives all meet the EPA's emissions standards. Union Pacific retired more than 3,200 older, less fuel efficient locomotives over the same period.

Since 2000, Union Pacific overhauled or rebuilt more than 6,700 diesel engines with emissions control upgrades. As a result of new locomotive and refurbishment programs, more than 96 percent of Union Pacific locomotives meet EPA emissions standards.

## Incorporating Technology

Technology plays a fundamental role in Union Pacific's fuel efficiency performance and supports our train crews who are responsible for the daily movement of goods Americans rely on. The following technologies help drive fuel efficiency across the system.

Trip Optimizer and the Locomotive Engineer Assist/Display and Event Recorder (LEADER) systems automatically control a locomotive's throttle and dynamic brake to minimize fuel usage and optimize train handling. The systems calculate the most efficient way of operating a train by considering such factors as train length, weight, grade, track conditions and locomotive performance.

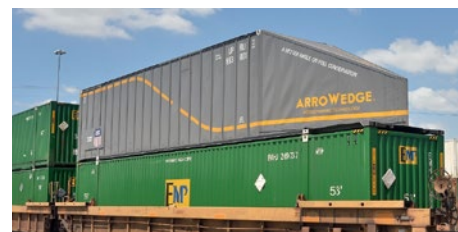
Our more than 1,300 LEADER- and Trip Optimizer-enabled locomotives completed 23.6 million trip miles. We also began testing enhancements that allow the systems to integrate with PTC, providing increased efficiency opportunities.

Process improvements reduce GHG emissions by optimizing maintenance work. Union Pacific's cross-functional Fuel Mizers Load Testing Reduction Team implemented an efficient process for locomotive tests that ensures engines and generators produce enough horsepower to pull loaded rail cars. The process reduced fuel consumption by more than 3.5 million gallons and improved reliability.

### THE NEXT GENERATION ARROWEDGE

Research and field testing for Union Pacific's patented ArroWedge© started to transition into realized fuel savings and environmental benefits. First put into service in 2014, the ArroWedge device is positioned on top of the first freight container of a double-stack intermodal train - containers hauling everyday items such as cell phones, televisions and clothing. Its tapered body allows air to more easily flow around the train's top frontmost containers, reducing aerodynamic drag and improving fuel efficiency. We added 50 ArroWedges, increasing the total number traveling across the nation to 57. Each ArroWedge saves around 140 gallons of fuel per round-trip across the system.

Originally built for 48-foot-long containers, we created an "add-on" flare extending the device to 53 feet. The result was a 20 percent greater fuel savings than the original design. As we move into 2018, our researchers are working on wind tunnel analysis to further refine the ArroWedge design.



*ArroWedge is the perfect example of Union Pacific's innovation strategy, never being satisfied with current results and pushing ourselves to achieve more.*



*The mother-slug units include fully equipped operator cabs, providing various crew amenities such as air conditioning, an ice box and a bathroom facility.*

### DRIVING FUEL EFFICIENCY IN HUMP YARD OPERATIONS

We're embracing innovation to enhance hump yard operations with 45 new "mother-slug" sets, representing Union Pacific's largest investment ever in the technology.

Mother-slug sets replace two locomotives with one diesel locomotive connected to an accessory, or slug. We use older SD38-2 locomotives, typically with higher emissions, for the conversion, and remove the engine and alternator. The engineless slug increases traction motors available to the locomotive, boosting the pulling and braking power – key for yard operations.

The new mother-slug sets achieve fuel and maintenance savings, plus offer environmental benefits, mainly because only one engine is being used versus two. We began rolling out this equipment and plan to finish implementation of the 45 sets in 2018.

### YARD WORKHORSES DRIVE BUSINESS

Union Pacific trimmed its active low horsepower (LHP) locomotive fleet by more than 500 units in 2016 and 2017. As a result, we expect substantial savings by 2021, primarily through lease returns, and reduced maintenance and fuel costs.

Thanks to LHP innovation, we can do more with less by extending unit life another 20 years on our roughly 1,600 units, which are mainly used for yard jobs and industry work. Preventive maintenance is essential for success. Our team developed specific plans for various LHP models, such as rebuilding the car body, overhauling the engine, giving locomotives a fresh paint job and upgrading control systems.

By using remote diagnostics and automatic over-the-road load testing during locomotive operation, we save time and fuel. In the past, a clipboard-toting technician measured items like oil pressure and temperature, noting problems and returning to the office. Now, fault codes are automatically transmitted for repair, and data is used over time to capture trends.



*An SD40 locomotive being prepped for work at Jenks Locomotive Facility in North Little Rock, Arkansas.*



# Energy Conservation

Union Pacific's utility conservation projects reduced energy consumption by 3.8 million kWh, which is enough to annually power more than 400 U.S. homes. Many projects were employee-driven solutions, such as locating leaks in underground air compressor lines, installing automatic control devices on locomotive part washers and testing new solar yard lighting. These solutions also provide guidance for future initiatives.

2017 ENERGY CONSUMPTION			
ENERGY CONSUMPTION*	2015	2016	2017
Diesel	1,071.3 gallons	979.9 gallons	1,010.6 gallons
Gasoline	11.9 gallons	11.5 gallons	11.5 gallons
Other fuel	17.7 gallons	11.4 gallons	10.9 gallons
Electricity	669.4 kilowatt hours	648.9 kilowatt hours	682.9 kilowatt hours
Natural gas	1,145.5 standard cubic feet	573.6 standard cubic feet	606.9 standard cubic feet

\*Estimated in millions

## INNOVATION CUTS ELECTRICITY USE

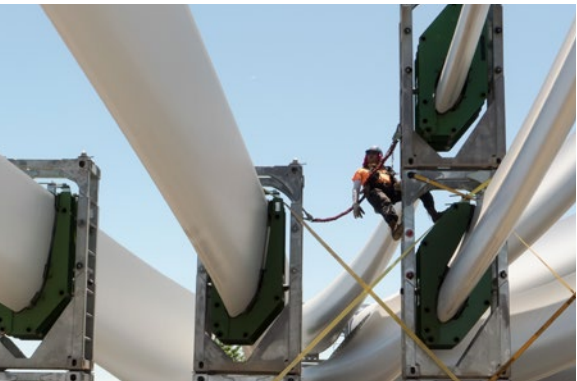
An effort to replace outdated and inefficient air compressors is responsible for roughly half of Union Pacific's 2017 energy consumption savings. Compressors represent about 20 percent of our electricity usage. They support critical functions, including yard and single-car air brake tests, and operating maintenance tools, locomotive sanding systems, hump retarders and switches, and waste water treatment pumps.

In 2015, a cross-functional team developed the compressor system currently being installed, which is between 30 and 90 percent more energy efficient. The percent varies depending on the age and length of underground pipes, as well as whether the original system was the right size for the facility. New compressors require less maintenance, increase equipment life, eliminate downtime during repairs and can be relocated to support operational changes.

We installed 10 of these systems, resulting in increased efficiency and reliability for our customers. We plan to continue installing new units in 2018.



A new air compressor in service in North Platte, Nebraska.



Stacked wind turbine blades at an Iowa distribution center wait to be taken to the installation site.

## WIND RIDES ON THE BACK OF UNION PACIFIC TRAINS

Giant wind turbines dot America's landscape. Due to the components' sheer size, they're often transported by trucks. Union Pacific provides a more efficient, affordable option for moving components long distances.

Union Pacific and our subsidiary, Loup Logistics – which provides door-to-door shipping and logistics services for companies shipping almost any commodity – work with customers like Vestas. We move wind harvesting components by rail car to distribution centers located within a specific distance, called wind miles, from a customer's wind farm project. Here, components are unloaded and wait to be taken to installation sites. We operate about 50 wind distribution centers nationwide.

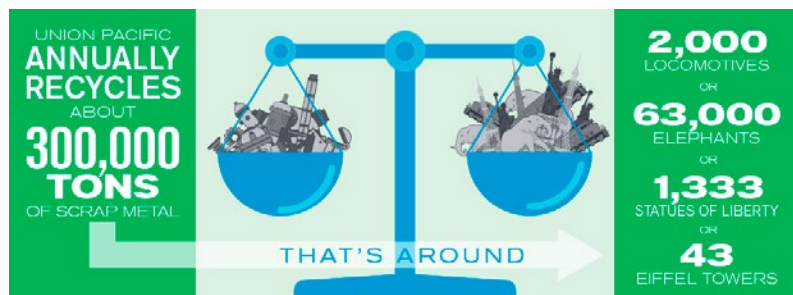
Visit [up.com](http://up.com) to learn more about wind power.

## Waste Management

Union Pacific generated an estimated 1.25 million tons of waste in 2017 and diverted approximately 70 percent of this waste from landfills.

### SCRAP METAL RECYCLING

Union Pacific annually recycles about 300,000 tons of scrap metal, the most energy efficient recyclable material. It is the second largest contributor – behind rail ties – to our success diverting recyclable materials from landfills. Steel, aluminum and copper are the most recycled materials on the planet and found in a variety of unexpected products. From appliances to cell phones, buildings and highways, recyclable materials are globally transforming construction and consumer products.



We provide steel recycling bins for employee use at fixed facilities, along our right of way and at off-site locations. Recyclable track material and railroad equipment include rail, tie plates, spikes, anchors, locomotives, rail cars and retired Engineering Maintenance of Way roadway equipment.

### DISPOSING E-WASTE

Union Pacific recycles electronics no longer in use, commonly known as e-waste. We recycled or distributed 163,000 pounds of electronic equipment and more than 1.8 million pounds of signal batteries. In November, we invited employees to drop off obsolete and unwanted electronics at our Omaha headquarters to mark America Recycles Day.

### RECYCLING FUEL AND OIL

We recycled more than 4 million gallons of oil and fuel at our facilities. Union Pacific facilities have systems to catch spills, extract engine oil from wastewater and use fuel nozzles that shut off automatically, preventing locomotive fuel tank overflow.

## Water Management

Many parts of the country experience water stress in local and regional watersheds. The U.S. Global Change Research Program notes widespread stress in much of the Southwest, western Great Plains and parts of the Northwest. We operate in many of these areas, and while managing thousands of utility accounts across our network can be challenging, we take our conservation responsibility seriously. Union Pacific used an estimated 1.14 billion gallons of water, a reduction from 1.25 billion in 2016. We continue exploring ways to conserve.

We analyzed the accounts, researched irregularities and identified opportunities to conserve millions of gallons. Our team is focused on using data to identify and address consumption changes, which might suggest a leak or other issue.

Union Pacific helps protect water resources from our operations through spill prevention controls and countermeasure plans at 133 facilities. Ninety-nine wastewater treatment facilities capture and treat water from equipment washing and maintenance. We also treat captured wastewater to comply with government regulations and wastewater discharge permits.

### LEAK REDUCTION INITIATIVE

We made multiple changes and repairs eliminating unnecessary water use. For example, one solution in Livonia, Louisiana, addressed an underground water leak. By replacing outdated infrastructure, we reduced water consumption by an estimated 10 million gallons a year.

### REPORTING WATER TO CDP

Union Pacific was the first Class 1 railroad to report water consumption to CDP, which we submitted for the fourth consecutive year. The company's B rating, an improvement from a C in 2016, reflects our awareness of the impacts of business activities on the environment, people, ecosystems and vice versa. The CDP results help our efforts to measure, monitor and report water consumption.

## PASSION, STEWARDSHIP EARN CHAIRMAN'S ENVIRONMENTAL AWARD



*General Foreman Milton Dempsey places boom around a drain at Davidson Yard car shop in Fort Worth, Texas.*

Union Pacific's General Foreman Milton Dempsey is often heard saying, "I hate litter; I just simply hate it." The 14-year railroader leaves nothing to chance when it comes to environmental stewardship in the Davidson Yard car shop in Fort Worth, Texas. His diligence earned him the 2017 Chairman's Environmental Award, honoring outstanding environmental awareness, leadership and responsibility.

His job duties include identifying and mitigating car deficiencies that could result in releasing hazardous substances. Dempsey also pinpoints work activity changes impacting oil handling/spill prevention plans and provides feedback to environmental managers. He is known among his colleagues for taking the lead on safety and being a reliable source on environmental issues.

Dempsey was Union Pacific's John H. Chafee Environmental Excellence Award nominee. This award is the Association of American Railroad's highest environmental honor, annually recognizing railroad employees for outstanding awareness and social responsibility.

## Biodiversity and Land Preservation

Biodiversity refers to the variety of living organisms in a particular habitat or ecosystem. Our footprint touches many diverse ecosystems, and we are committed to being a responsible steward of the land we own. We work to preserve our ecosystems, improve our resiliency and reduce our impacts. This is fundamental to ensuring a healthy environment and supporting vibrant local economies.

Union Pacific implements habitat conservation plans to protect ecosystems and endangered species in various locations. Plans in the western half of our network include the desert tortoise, endangered southwestern willow flycatcher and valley elderberry longhorn beetle.

We also manage 30 miles of trees to prevent sand from blowing across the track in the Mojave Desert and actively manage several wetland areas.

## USING OUR NETWORK TO ESTABLISH HABITAT CORRIDORS

Union Pacific's vast rail network provides an opportunity to establish ecologically significant habitat corridors across wide areas of the central and western United States. In 2015, we joined the Wildlife Habitat Council (WHC) to leverage this potential for preserving and improving pollinator habitats. Starting with lands away from railroad operations, we are working with the WHC to establish a suitable habitat to support migrating species, such as the Monarch butterfly. Union Pacific also is part of the Rights of Way Habitat working group, supported by the University of Illinois at Chicago to enhance our efforts.

## Compliance

Union Pacific is committed to following applicable laws and regulations in all areas of our operations. From time to time, we are involved in legal proceedings, claims and litigation that occur in connection with our business. For example, we received notices from the EPA and state environmental laws for remediation costs at various sites throughout the United States, including sites on the Superfund National Priorities List or state superfund lists. We cannot predict the ultimate impact of these proceedings and suits because of the number of potentially responsible parties involved, the degree of contamination by various wastes, the scarcity and quality of volumetric data related to many of the sites, and the speculative nature of remediation costs. Where we are found in violation of specific rules or regulations, we seek remedy through the appropriate channels. More information on these notices can be found in our [Annual Report Form 10-K](#).



# Looking Ahead

# 2018 GOALS

## Economic Impact

-  **\$3.3 billion** investment in our infrastructure
-  Maximize our franchise with **completion of Industrial Development** projects

## Operating Safely

-  Continued strides toward an **incident-free environment**
-  Continued community engagement **through UP CARES and social media** to decrease crossing incidents

## Strengthening Communities

-  Increase overall community giving to **more than \$20 million**
-  **Launch key partnerships** with Safe Kids Worldwide, National Park Foundation and LISC

## Engaging Employees

-  Complete **Employee Engagement Survey** and use results to further enhance company culture
-  Drive greater participation in **Innovation Station** campaigns

## Preserving the Environment

-  Test and grow switching fleet with **low power and emission** locomotives
-  Eliminate unnecessary water use and **identify ways to conserve**

# Looking Ahead

## FEEDBACK

For questions on this report or to provide feedback, contact Union Pacific via email at [sustainability@up.com](mailto:sustainability@up.com).

## OUR COMMITMENT

Since our founding more than 150 years ago, Union Pacific has driven economic growth in America. Our vision, mission and values are focused on completing tasks better tomorrow than we do today, enabling Union Pacific to remain critical to the American economy in the centuries to come. We will continue to strive to be the best in the business in our safety initiatives, on our tracks, in our communities, across our workforce and for our environment. The 2017 Building America Report shares our initiatives and progress, thus far. We are proud of our accomplishments and our work to improve operations. In the years ahead, we will continue to invest in our employees, communities and infrastructure because they shape our growth and success.

## CAUTIONARY INFORMATION

Our Building America Report provides additional explanatory information regarding Union Pacific that may not be available, included or directly derived from information in the company's Annual Report. This report includes statements and information regarding future expectations or results of the company that are not historical facts. These statements and information are, or will be forward looking as defined by federal securities laws. Forward-looking statements and information can be identified by use of forward-looking terminology (and derivations thereof), such as "believes," "expects," "may," "should," "will," "would," "intends," "plans," "estimates," "anticipates," "projects" and other words or phrases of similar intent. Forward-looking statements and information generally include the following: the company's expectations or forecasts with respect to general economic conditions in the United States and the world; the company's financial and operational performance; increases of the company's earnings; demand for the company's rail service; improving customer service; enhancing profitability; volume and revenue growth; efficiency improvements and increasing returns; and improving asset utilization. Statements also include the effectiveness or growth of new and newer services; management of network volumes; increasing shareholder value; total amount of capital investments; completion and effectiveness of capacity expansion and other capital investments, and other investments in infrastructure improvements; returns on capital investments; improvements regarding safety of our operations and equipment; improving efficiencies in fuel consumption; preserving the environment and communities where the company operates; and effectiveness of plans, programs and initiatives to reduce costs and other efficiency improvements. Forward-looking statements and information should not be read as a guarantee of future performance or results and will not necessarily be accurate indications of the times that, or by which, such performance or results will be achieved. Forward-looking statements and information are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in the statements. Forward-looking statements and information reflect the good faith consideration by management of currently available information and may be based on underlying assumptions believed to be reasonable under the circumstances. However, such information and assumptions (and, therefore, such forward-looking statements and information) are or may be subject to variables or unknown or unforeseeable events or circumstances over which management has little or no influence or control.

The risk factors in Item 1A of the company's [Annual Report Form 10-K](#), filed Feb. 9, 2018, could affect our future results and could cause those results or other outcomes to differ materially from those expressed or implied in the forward-looking statements and information. This report should be read in consideration of these risk factors. To the extent circumstances require or the company deems it otherwise necessary, the company will update or amend these risk factors in subsequent Annual Reports, periodic reports on Form 10-Q or current reports on Form 8-K. Forward-looking statements speak only as of the date the statement was made. We assume no obligation to update forward-looking information to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect thereto or with respect to other forward-looking statements.

## ADDITIONAL RESOURCES

For ongoing updates on our citizenship and sustainability efforts, visit [www.up.com](http://www.up.com).

- [Media](#) – Up-to-date information about Union Pacific.
- [Environment](#) – Sustainability commitments and progress.
- [Employees](#) – Programs and services available to our workforce.
- [Customers](#) – Product offerings and business groups.
- [Investors](#) – Annual report, proxy statements and other SEC filings.
- [Communities](#) – News, photos and video about Union Pacific, our employees and the communities where we operate.
- [Careers](#) – Career opportunities and benefits to joining Union Pacific's workforce.