RAILWAY VISION FOR NORTH AMERICA

↗ A SMART CHOICE FOR THE FUTURE

SAFE, EFFICIENT, RELIABLE

Draft

INTERNATIONAL UNION
OF RAILWAYS

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INTERNATIONAL UNION
OF RAILWAYS

INTRODUCTION

The International Union of Railways plays an essential role in gathering and disseminating information among the key players in the railway industry.

Early on in my mandate as VIA Rail's President and CEO I became the chairperson of the UIC's North American Region, led by my strong belief that rail transport is the smart choice for the future.

The railway has always been a means of connecting communities as well as bolstering economic success along its route in a safe, efficient and reliable way. Let's continue this great tradition and ensure its strong future by working together to grow our businesses and our national economies.

The rail industry is currently at a crossroads, or perhaps a better term would be at a "diamond". Railways control the most valuable of transportation assets: rights of way. They are the passages through which goods and people flow to support the mobility essential to the growth and development of our countries. As such, these private assets have a public vocation as well as a private obligation to financial return.

When our governments granted us these rights of way it was with the understanding that we would do our best to exploit them for the common good. We railroaders have a duty to all our stakeholders to ensure that rights of way are used to their full potential. This duty to serve shareholders and citizens can only be achieved through cooperation, interoperability and cohabitation. Our countries cannot afford to let rights of way remain underutilized. It's bad business, it's bad economics, and it's bad stakeholder management.

I am greatly looking forward to exchanging ideas, technologies and innovations and forging new ties with all of you.

Yves Desjardins-Siciliano
President and CEO, VIA Rail Canada
Chairman of the UIC North American Region

UIC MEMBERS IN NORTH AMERICA

AAR, ASSOCIATION OF AMERICAN RAILROADS

Operating over a 140,000 mile network stretching across the far reaches of north America, AAR members include the major freight railroads in the united states, Canada and Mexico, as well as Amtrak. Working with elected officials and leaders in Washington, D.C. on critical transportation and related issues, AAR ensures that the freight rail industry will continue to meet America's transportation needs today and tomorrow.

As the standard setting organization for north America's railroads, AA is also focused on improving the safety and productivity of rail transportation. AAR helps advance these goals through its two subsidiaries, the Railinc Corp. and the trans- portation technology Center inc. (TTCI), the world's leading research, development and testing facility, developing next-generation advancements in safety and opera- tion efficiency.

▸ **AAR is a UIC Member (Affiliate) since 1983.**

AMTRAK, THE NATIONAL RAIL OPERATOR FOR INTERCITY PASSENGER SERVICE

Amtrak, the national rail operator, connects America in safer, greener and healthier ways. With 21,000 route miles in 46 states, the district of Columbia and three Cana- dian provinces, Amtrak operates more than 300 trains each day — at speeds up to 150 mph — to more than 500 destinations. Amtrak also is the operator of choice for state-supported corridor services in 15 states and for four commuter rail agencies. Amtrak was created by Congress in the rail Passenger service act of 1970 and incor- porated in the district of Columbia in 1971, assuming the common carrier obligations of the private railroads (which found passenger service to be generally unprofitable) in exchange for the right to priority access of their tracks for incremental cost.

▸ **AMTRAK is a UIC Member (Associate) since 1978.**

CHSRA, CALIFORNIA HIGH-SPEED RAIL AUTHORITY

The California high-speed rail authority is responsible for planning, designing, building and operation of the first high-speed rail system in the nation. California high-speed rail will connect the mega-regions of the state, contribute to economic development and a cleaner environment, create jobs and preserve agricultural and protected lands.

By 2029, the system will run from San Francisco to the Los Angeles basin in under three hours at speeds capable of over 200 miles per hour. the system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations.

in addition, the authority is working with regional partners to implement a statewide rail modernization plan that will invest billions of dollars in local and regional rail lines to meet the state's 21st century transportation needs.

▸ **CHSRA is a UIC Member (Affiliate) since 2012.**

FRA, FEDERAL RAILROAD ADMINISTRATION

The federal railroad administration (FRA) was created by the department of transportation act of 1966. it is one of ten agencies within the U.S department of transportation concerned with intermodal transportation. the mission of the federal railroad administration (FRA) is to enable the safe, reliable, and efficient movement of people and goods for a strong America, now and in the future. FRA accomplishes this mission primarily through issuance, implementation, and enforcement of safety regulations; selective investment to develop the rail network across the country; and research and technology development.
recognizing the associated scale and complexity of improving the nation's rail network, FRA is also working with other agencies and rail stakeholders to develop comprehensive strategies for accomplishing this. the focus is on strategically maintaining current rail services and infrastructure, expanding and improving the rail network to accommodate growing travel and freight demand, and providing leadership in national and regional system planning and development.

▸ **FRA is a UIC Member (Affiliate) since 1973.**

VIA RAIL CANADA, THE CANADIAN NATIONAL PASSENGER RAIL SERVICE

Via rail Canada operates the national passenger rail service on behalf of the govern-
ment of Canada. established as a Corporation in 1978, Via rail operates almost 500 trains weekly on 12,500 kilometers of track, and serves 450 communities across the country, from coast to coast and north to Hudson Bay.
Via's fleet includes 396 passenger cars and 78 active locomotives. in addition to 159 railway stations, Via operates four modern maintenance facilities, and employs some 3,000 people. While Via owns 223 kilometers of track, most of the infrastruc- ture used by the passenger service is owned and managed by the freight railways, including ten different national and short-line operators.

▸ **VIA Rail Canada is a UIC Member (Associate) since 1992.**

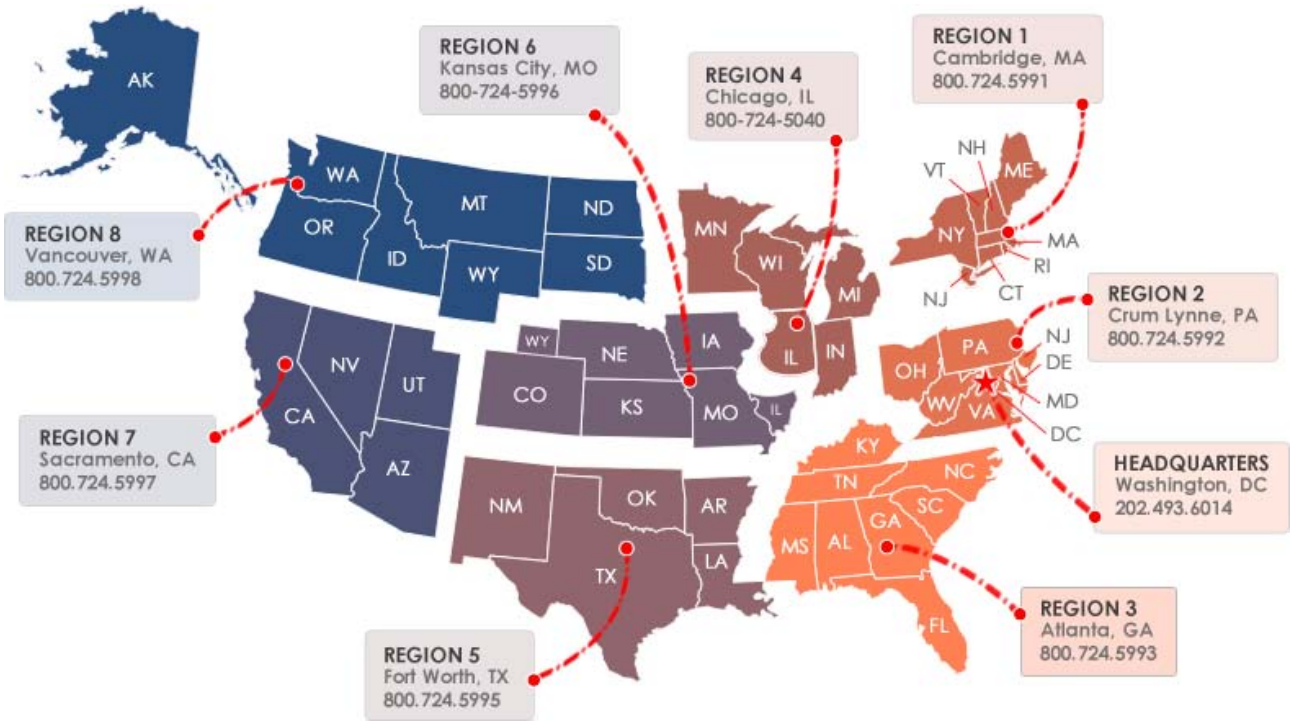
RAC, THE RAILWAY ASSOCIATION OF CANADA

The Railway Association of Canada (RAC) represents more than 50 freight and passenger railway companies—railways that transport more than 84 million passengers and more than $280 billion worth of goods across our country each year. RAC also counts a growing number of industrial railways and railway supply companies in its associate membership. RAC's mission is to work with governments and communities across the country to ensure that Canada's rail sector remains globally competitive, sustainable, and most importantly, safe. Governments turn to RAC to help them develop new regulations, rules and standards. RAC also provides outreach, research and public education to ensure that Canadians are aware of the critical role rail plays in our lives and our economy.

▸ **RAC is a UIC Member (Affiliate) since 2016.**

INTRODUCING THE U.S. FEDERAL RAILROAD ADMINISTRATION

The Federal Railroad Administration (FRA) is one of nine operating administrations that make up the United States Department of Transportation (DOT), which was established by an Act of Congress in 1966. The FRA is led by an Administrator appointed by the President of the United States and confirmed by the U.S. Senate.
In addition to its Washington, D.C., headquarters, the agency is comprised of eight regional offices and has a diverse staff of over 900 employees.



KEEPING RAILROADS AND THE PUBLIC SAFE

Safety is FRA's number one priority. During the past several years, the U.S. railroad network has experienced significant reductions in train accidents, highway-rail grade crossing collisions, and rail employee fatalities.

Over the past decade, FRA has made strides in important safety initiatives, such as:

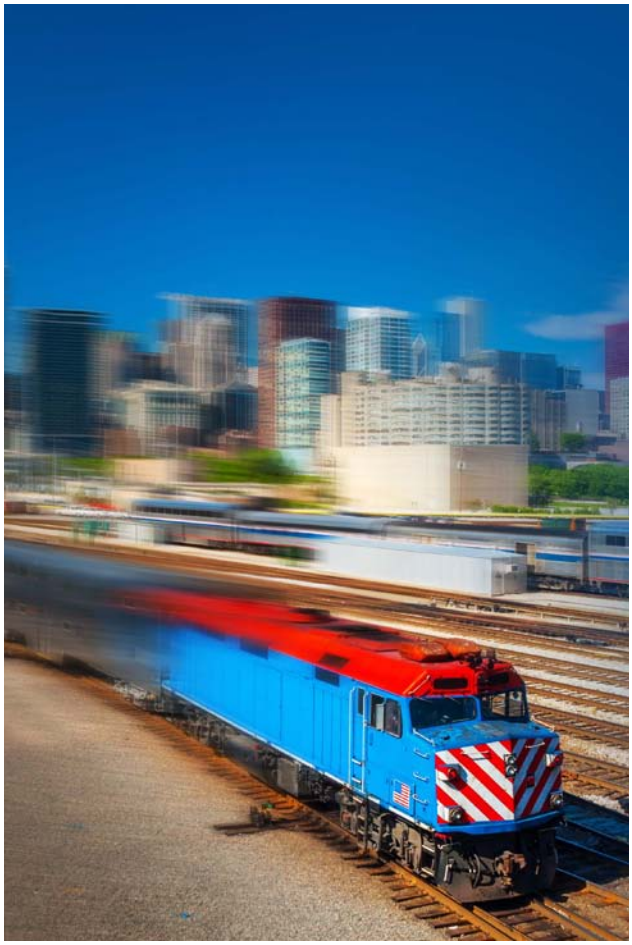
- Highway-Rail Grade Crossing Program Enhancements
- Passenger Equipment Safety Standards
- Hazardous Materials Transport / Tank Car Safety
- Control of Alcohol and Drug Use
- Railroad Employees' Hours of Service
- Risk Reduction / System Safety / Confidential Close Call Reporting System (C3RS)
- Positive Train Control (PTC)

The FRA has many programs and initiatives that help foster a safe railroad environment nationwide. To promote and regulate safety throughout the U.S. railroad network, FRA provides railroad safety and customer training (including supporting training for state safety inspectors); investigates and reports on accidents and employee fatalities; partners with labor and management to address systemic issues; and, develops and implements safety rules and standards.

FREIGHT AND PASSENGER RAIL REGULATORY OVERSIGHT

The FRA's mission is to enable the safe, reliable, and efficient movement of people and goods for a strong America, now and in the future. The agency's mission, in turn, promotes DOT's broader vision through its core strategic goals of *Safety*, *Infrastructure*, *Innovation*, and *Accountability*.

The FRA accomplishes its mission by providing a rigorous oversight and inspection program based on the strategic use of data; advancing proactive approaches for early identification and mitigation of risk; and maximizing public benefits from capital investments and a robust research, development, and technology program.



FRA'S PARTNERS IN ADVANCING RAIL NETWORK DEVELOPMENT

Recognizing the scale and complexity of the U.S. rail network, the FRA works in partnership with other agencies and rail stakeholders to develop comprehensive strategies for accomplishing this goal. FRA's focus is on maintaining current rail services and infrastructure, strategically expanding and improving the rail network to accommodate growing travel and freight demand, and providing leadership in national and regional system planning and development.

A key strategy on the FRA's research and development side is stakeholder engagement and partnerships with the broader rail community. In addition to these various partnerships, FRA personnel either sponsor or are represented on rail-related boards, committees, and task forces that share information or provide forums for collaborative efforts.

INVESTMENT IN ADVANCING AND DEVELOPING THE U.S. RAIL NETWORK

The FRA advances market-based rail improvements by managing a diverse, multibillion-dollar grant portfolio and providing technical assistance to DOT loan programs. Amtrak Grants, Safety Infrastructure Grants, Research and Development Grants, DOT Grants, and Rail Development Grants are the major components of FRA's grant portfolio.

Amtrak & FRA's Role

The National Railroad Passenger Corporation, more commonly known as Amtrak, operates a nationwide passenger rail network that includes state-supported short-distance corridor service in heavily populated regions, and long-distance services connecting rural areas and distant population centers. It is a congressionally chartered for-profit corporation that is independent for purposes of day-to-day operations. Amtrak relies, in part, on annual Federal and state appropriations funding, with the U.S. Federal government exercising long-term control over it.

The FRA is responsible for administering the Amtrak Grants program—for operating, capital, and debt obligations. The agency also oversees Amtrak's performance, inspects safety compliance, and provides technical assistance and standards.

Federal Railroad Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

For more information visit us at
www.fra.dot.gov

Connect with us **USDOTFRA**

Ronald L. Batory
Administrator
Federal Railroad Administration (FRA)

Nominated by President Donald J. Trump on July 10, 2017, and confirmed by the United States Senate on February 13, 2018, Ronald Batory is the fourteenth Administrator of the Federal Railroad Administration (FRA). Mr. Batory is a widely respected and highly regarded railroad industry professional with more than 45 years of experience serving in numerous operational, administrative, and managerial positions.

Mr. Batory began his railroad career in 1971 working as a traveling Freight Car Accounting Auditor for the Detroit, Toledo and Ironton (DT&I) Railroad. He subsequently served in a series of positions with progressively greater responsibility before joining the Grand Trunk Western Railroad (GTW) in 1981 when it acquired the DT&I. In 1987, Mr. Batory became Vice President-General Manager of the Chicago, Missouri and Western Railway, and then in 1989 went to work for the Southern Pacific Transportation Company. During his regional leadership tenure at Southern Pacific, he fostered joint labor and management efforts focused on casualty prevention, service consistency, and cost containment, resulting in significantly improved operational performance.

In 1994, Mr. Batory was named President of the Belt Railway Company of Chicago (BRC), the largest switching terminal in the U.S. and a vitally important linchpin in the nation's rail hub, jointly owned at the time by nine Class 1 railroads. His success in serving the needs of multiple competing railroads at the BRC prompted CSX and Norfolk Southern Corporation to recruit him in 1998 to manage the partitioning of Consolidated Rail Corporation (Conrail) as part of a merger approved by the U.S. Surface Transportation Board. In 2004, Mr. Batory became President & Chief Operating Officer of Conrail, the eighth largest freight railroad in America, until his retirement in April 2017.

Mr. Batory is a native of Detroit, Michigan. He earned his Bachelor of Arts degree in 1971 from Adrian College in Michigan, and a Master of Arts degree in 1975 from Eastern Michigan University.

FOCUSSES ON MAIN ACHIEVEMENTS AND DEVELOPMENTS

AAR, ASSOCIATION OF AMERICAN RAILROADS

From one end of the country to the other, America is connected by the best freight rail system in the world. The seven large "Class I" railroads, working with hundreds of smaller railroads and tens of thousands of rail customers, deliver economic growth, support job creation, and provide crucial environmental benefits such as reduced highway gridlock and cleaner air. America's freight railroads are almost entirely privately owned and operated: unlike trucks and barges, freight railroads operate overwhelmingly on infrastructure that they own, build, maintain, and pay for themselves. In recent years, railroads have been spending more than ever before on maintaining and growing their nearly 140,000-mile U.S. freight rail network. Railroads are getting ready today to meet the freight transportation challenges of tomorrow.

DELIVERING THE GOODS ACROSS THE COUNTRY AND TO THE WORLD

Close to 600 freight railroads operate in the United States. The seven "Class I" railroads — railroads with 2016 revenue of at least $447.6 million — account for around 69 percent of freight rail mileage, 90 percent of employees, and 94 percent of revenue. Each Class I railroad operates in multiple states over thousands of miles of track. Total operating revenue for Class I railroads in 2017 was approximately $70 billion.

Non-Class I railroads (also known as short line and regional railroads) range in size from tiny operations handling a few carloads a month to multi-state operators not far from Class I size. Collectively, they earn several billion dollars in revenue each year.

Together, freight railroads operating in the United States form an integrated, nearly 140,000-mile system that earned close to $74 billion in revenue in 2017 and that provides the world's safest, most productive, and lowest-cost freight rail service.

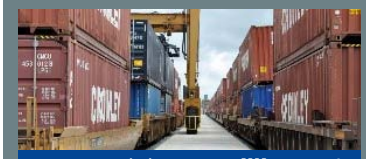
Michael J. Rush
Senior Vice President – Safety and Operations

Michael J. Rush serves as the industry's liaison with regulatory bodies including the U.S. Department of Transportation, Environmental Protection Agency, and Department of Homeland Security. Among other responsibilities, Rush oversees the rail industry's interchange standards, homeland security plan, and environmental protection and safety programs. Rush has 37 years of experience at AAR. Prior to his current position, Rush served as associate general counsel. In this role, Rush counseled AAR and its member railroads on environment and safety issues and other corporate matters of concern. An expert in regulatory law, Rush represented AAR in various regulatory agency and legislative activities, testifying at hearings and drafting comments, briefs, and Congressional testimony.

From the food on our tables to the cars we drive to the shoes on our children's feet, freight railroads carry the things America depends on:

- Historically, coal has generated more electricity than any other fuel, and railroads deliver around 70 percent of coal delivered to power plants. Railroads also carry enormous amounts of corn, wheat, soybeans, and other grains; fertilizers, plastic resins, and a vast array of other chemicals; cement, sand, and crushed stone to build our highways; lumber and drywall to build our homes; autos and auto parts; animal feed, canned goods, corn syrup, flour, frozen chickens, beer, and countless other food products; steel and other metal products; crude oil, asphalt, liquefied gases, and many other petroleum products; newsprint, paperboard, and other paper products; iron ore and scrap metal for steelmaking; and much more.
- Rail intermodal is the movement of shipping containers and truck trailers by rail. It's been the fastest growing major rail traffic segment over the past 25 years. Just about everything you find on a retailer's shelves may have traveled on an intermodal train. Around half of rail intermodal consists of imports or exports, reflecting the vital role intermodal plays in international trade.

CARRYNG THE THINGS AMERICA DEPENDS ON



Intermodal: **13.7 million** trailers and containers

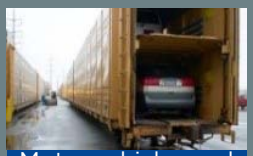
Food products: **1.6 million** carloads

Lumber, paper & other forest products: **1.2 million** carloads

Grain and other farm products: **1.6 million** carloads

Plastics, fertilizers and other chemicals: **2.3 million** carloads

Sand, stone & gravel: **1.5 million** carloads



Motor vehicles and parts: **1.8 million** carloads

Coal: **4.5 million** carloads

And much more!

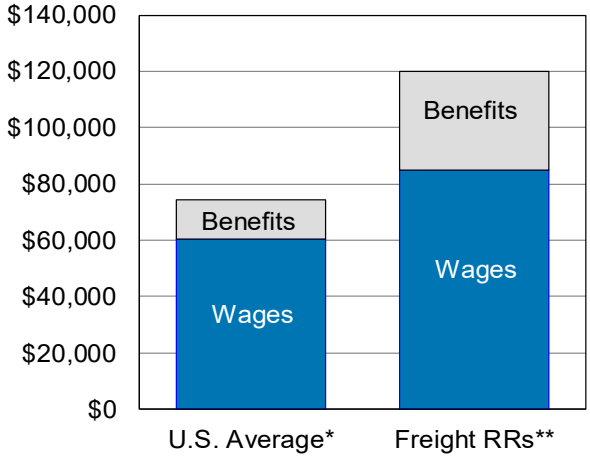
Figures are for 2017.

THE RIGHT TRACK FOR THE ECONOMY

Since the industry's founding more than 185 years ago, freight railroads have been indispensable to America's economic development.

- America's freight railroads connect producers and consumers across the country and the world, expanding existing markets and opening new ones.

ANNUAL COMPENSATION: U.S. FREIGHT RAILROADS VS. U.S. AVERAGE



*Average full-time employee equivalent in domestic industries.
**Average Class I freight railroads. Data are 2016. Source: BEA, AAR

- The approximately 170,000 freight railroad employees are among America's most highly compensated workers. In 2016, the average U.S. Class I freight railroad employee earned wages of $84,800 and fringe benefits of $35,000, for total average compensation of $119,800. By contrast, according to the Bureau of Economic Analysis, the average wage per full-time equivalent U.S. employee in domestic industries in 2016 was $60,300 (just 71 percent of the comparable rail figure) and average total compensation was $74,400 (just 62 percent of the rail figure).
- A June 2016 study from Towson University's Regional Economic Studies Institute found that, in 2014 alone, the operations and capital investment of America's major freight railroads supported approximately 1.5 million jobs (1.1 percent of all U.S. workers — nearly nine jobs for every railroad job), nearly $274 billion in economic output (1.6 percent of total U.S. output), and $88 billion in wages (1.3 percent of total U.S. wages). Railroads also generated nearly $33 billion in tax revenues. These impacts include direct, indirect, and induced effects across the U.S. economy. In addition, millions of Americans work in industries that are more competi-

tive in the tough global economy thanks to the affordability and productivity of America's freight railroads.

- Without railroads, American firms and consumers would be unable to participate in the global economy anywhere near as fully as they do today. In 2014, international trade accounted for an estimated 35 percent of U.S. rail revenue, 27 percent of U.S. rail tonnage, and 42 percent of the carloads and intermodal units U.S. railroads carried.

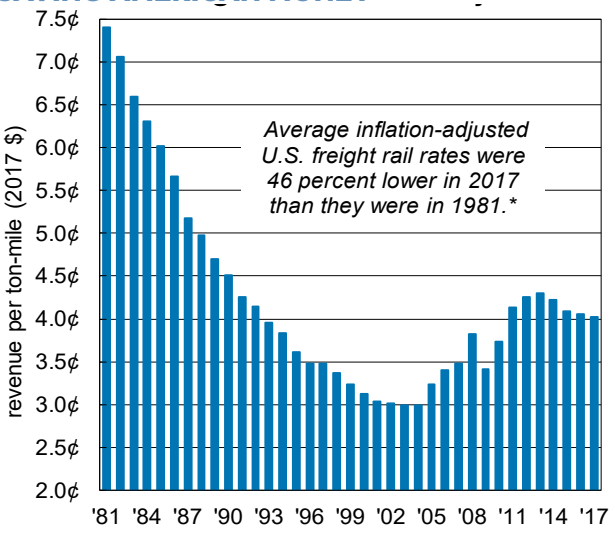
INTERNATIONAL TRADE AS A SHARE OF RAIL TRAFFIC IN 2014

	Rail Total	Trade Share	Trade % of Total
Revenue ($ bil)	$75.1	$26.4	35.2%
Tons (millions)	1,879.4	511.0	27.2%
Units (millions)*	32.2	13.4	41.6%

*carloads and intermodal containers and trailers

Source: AAR analysis of government and other data

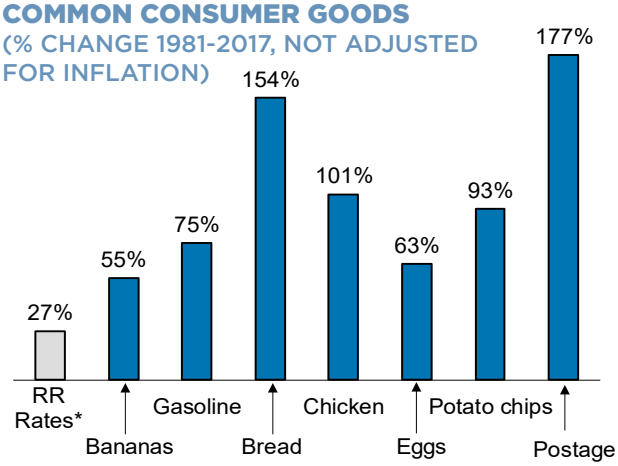
SAVING AMERICAN MONEY



*Revenue per ton-mile, average all commodities. Source: AAR

RAILROAD RATES* VS. AVERAGE PRICES OF COMMON CONSUMER GOODS

(% CHANGE 1981-2017, NOT ADJUSTED FOR INFLATION)



AFFORDABLE AND EFFICIENT

The affordability of freight rail saves rail customers (and, ultimately, American consumers) billions of dollars each year and enhances the global competitiveness of U.S. goods:

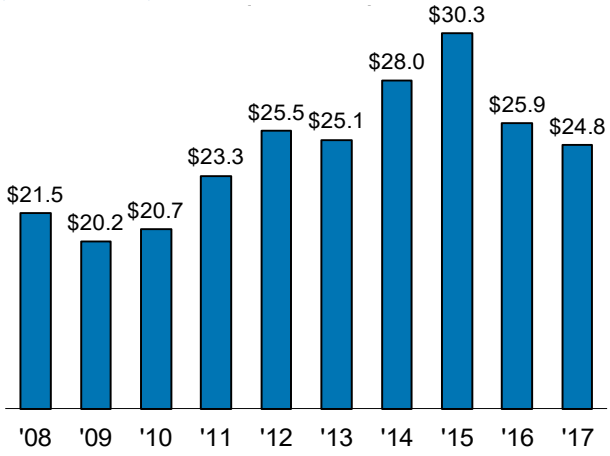
- Average rail rates (measured by inflation-adjusted revenue per ton-mile) were 46 percent lower in 2017 than in 1981. This means the average rail shipper can move close to twice as much freight for about the same price it paid more than 35 years ago.
- U.S. freight railroads, along with their counterparts in Canada, are the most affordable among the world's major countries. According to the most recent available data from the World Bank and other sources, U.S. freight rail rates (measured by revenue per ton-mile) are less than half those in major European countries and well below China and Japan as well.
- Several years ago, the American Association of State Highway and Transportation Officials (AASHTO) estimated that if all freight rail traffic were shifted to trucks, rail customers would have to pay an additional $69 billion per year. Adjusted for increased freight volume and inflation, it's probably close to $100 billion today.

INVESTING FOR THE FUTURE

As America's economy grows, the need to move more freight will grow too. The Federal Highway Administration recently forecast that total U.S. freight shipments will rise from an estimated 18.1 billion tons in 2015 to 25.5 billion tons in 2040 — a 41 percent increase. Railroads are getting ready today to meet this challenge:

- America's freight railroads operate overwhelmingly on infrastructure that they own, build, maintain, and pay for themselves. By contrast, trucks, airlines, and barges operate on highways, airways, and waterways that are publicly funded.
- From 1980 to 2017, America's freight railroads spent more than $660 billion — their own funds, not taxpayer funds — on capital expenditures and maintenance expenses related to locomotives, freight cars, tracks, bridges, tunnels and other infrastructure and equipment. That's more than 40 cents out of each revenue dollar. America's freight railroads have been spending more in recent years than ever before on a network that keeps our economy moving.
- Over the past decade, the average U.S. manufacturer has spent about 3 percent of revenue on capital expenditures. The comparable figure for U.S. freight railroads is close to 19 percent, or about six times higher.

RECORD RAILROAD SPENDING ON IN-FRASTRUCTURE & EQUIPMENT*
($ BILLIONS)



*Capital spending + maintenance expenses.
Data are for Class I railroads. Source: AAR

CAPITAL SPENDING AS % OF REVENUE*

Average all manufacturing	**2.9%**
Food	2.2%
Petroleum & coal products	2.4%
Machinery	2.6%
Fabricated metal products	3.1%
Primary metal products	3.1%
Wood producs	3.1%
Motor vehicles & parts	3.2%
Chemicals	3.4%
Plastics & rubber products	3.6%
Paper	4.0%
Nonmetallic minerals	4.8%
Computer & electr. products	5.1%
Class I Railroads	**19.1%**

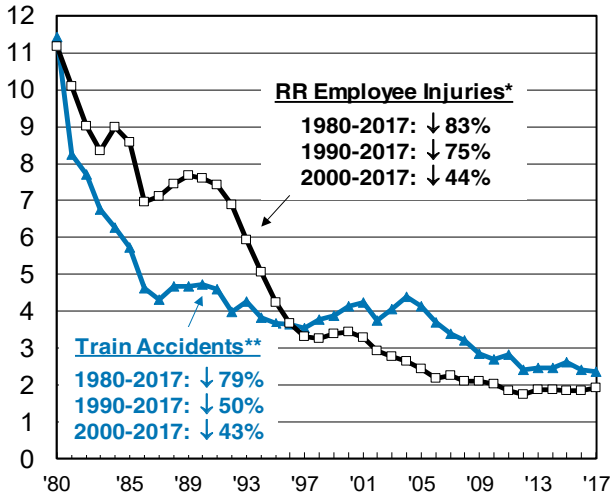
*Avg. 2007-2016
Source: Census Bureau, AAR

ALWAYS LOOKING TO IMPROVE SAFETY

Nothing is more important to railroads than safety, and railroads know that the safety challenge never ends. That's why railroads, in cooperation with policymakers, their employees, suppliers, and customers, are constantly looking for new technologies, operational enhancements, improved training, and other ways to further improve their already excellent safety record.

↗ The train accident rate in 2017 was the lowest ever; in 2017, it was down 79 percent from 1980 and down 43 percent from 2000; the employee injury rate in 2017 was down 80 percent from 1980 and down 38 percent from 2000. By all these measures, recent years have been the safest in history. The rate of accidents caused by defective track and by human error were the lowest ever in 2017.

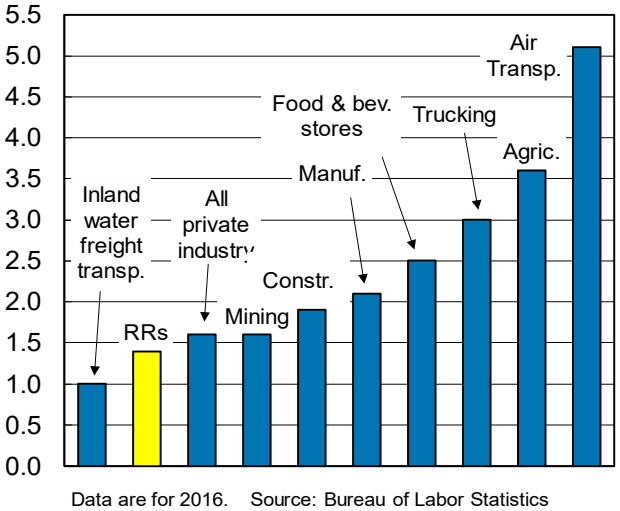
RAIL ACCIDENT & INJURY RATES HAVE PLUNGED



*Per 100 employee equivalents. **Per million train-miles.
2017 is preliminary Source: FRA

↗ Railroads today have lower employee injury rates than most other major industries, including trucking, airlines, agriculture, mining, manufacturing, and construction — even lower than food stores.

RRS ARE SAFER THAN MOST OTHER INDUSTRIES
(INJURIES PER 200,000 EMPLOYEE-HOURS)



Data are for 2016. Source: Bureau of Labor Statistics

↗ Virtually every aspect of rail operations is subject to FRA safety oversight. For example, stringent FRA regulations cover track and equipment inspections, employee certification, operating speeds, and signaling systems. FRA safety inspectors travel the country evaluating rail facili-

ties and operations. In many states, FRA inspectors are supplemented by state inspectors. Railroads are also subject to safety oversight by the Occupational Safety and Health Administration, the Pipeline and Hazardous Materials Safety Administration, and the Department of Homeland Security.

- Railroads are constantly incorporating new technologies to improve safety. Just a few examples include sophisticated detectors along tracks that identify defects on passing rail cars; ground-penetrating radar that identifies problems below ground, such as excessive moisture, that could destabilize track; and specialized rail cars that use sophisticated instruments to identify defects in tracks.

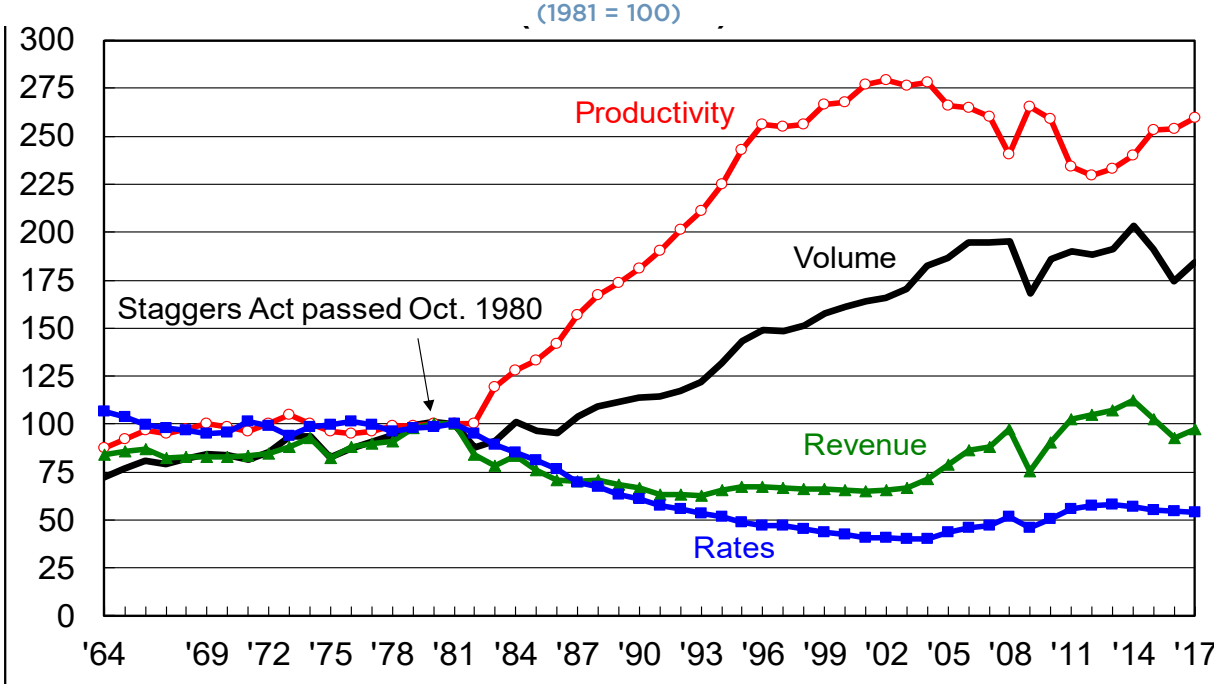
ESSENTIAL TO A GREENER, LESS-CONGESTED FUTURE

- In 2017, U.S. railroads moved a ton of freight an average of 479 miles per gallon of fuel. On average, railroads are four times more fuel efficient than trucks. Because greenhouse gas emissions are directly related to fuel consumption, moving freight by rail instead of truck reduces greenhouse gas emissions by an average of 75 percent. In addition, emissions of particulate matter and nitrogen oxides are significantly lower for railroads than for trucks.
- Because a single train can replace several hundred trucks, railroads help reduce highway gridlock and the need to spend scarce taxpayer dollars on highways.

A NEED FOR REASONABLE REGULATION

- Largely because of decades of excessive regulation, by the 1970s U.S. freight railroads were on the brink of ruin. Railroad bankruptcies were common, and tracks and equipment were falling apart because railroads couldn't afford the cost of maintenance. The economy suffered greatly because railroads could not provide the quality service their customers needed.
- Recognizing the need for reform, Congress passed the Staggers Rail Act in 1980. The Staggers Act put in place a more reasonable regulatory system under which railroads could largely decide for themselves — rather than have Washington decide for them — what routes to use, what services to offer, and what prices to charge. Railroads today don't have unlimited freedom to charge whatever they want, though. If a railroad faces no effective competition for its services, the U.S. DOT's Surface Transportation Board can limit what the railroad can charge.
- Unfortunately, some shortsighted groups are calling for a return to the days of unbalanced and unreasonable rail regulation. Policymakers should reject these calls. America needs a common-sense regulatory system that provides effective oversight but gives railroads the opportunity to earn enough to provide the rail system our economy needs to grow. Rail investment should be encouraged, and regulations and legislation should not harm railroads' ability or willingness to make those investments.

U.S. FREIGHT RAILROAD PERFORMANCE SINCE STAGGERS
(1981 = 100)



"Rates" is inflation-adjusted revenue per ton-mile. "Volume" is ton-miles. "Productivity" is revenue ton-miles per constant dollar operating expense. "Revenue" is operating revenue in 2017 $. Source: AAR

RESEARCH VISION

Gary Fry, Ph.D., P.E.
AVP — Research and Development, Transportation Technology Center, Inc.

Dr. Fry leads the North American rail industry's Strategic Research Initiatives program. He holds a Ph.D. in Civil Engineering from the University of Illinois at Urbana-Champaign. He has 28 years of experience in research on the fatigue and fracture behavior of structural metals and weldments. Dr. Fry has studied the fatigue and fracture behavior of railroad rail, railroad rail welds, railcar wheels and axles, railway and highway bridges, and steel office towers subjected to strong-ground-motion earthquakes. His research results have been incorporated into international codes of practice used in the design of these components and systems. Prior to joining TTCI, Dr. Fry served for more than 20 years on the engineering faculty at Texas A&M University, where he established and directed the Center for Railway Research.

RESEARCH VISION

The research vision for North America's railways is a future without train derailments or train accidents.

RESEARCH MISSION

The research mission for North America's railways is to create and transfer knowledge, to innovate, to support functional and technological development, and to support implementation.

RESEARCH SUPPORT AND FACILITIES

For more than 80 years, the Association of American Railroads (AAR) has maintained a steadfast commitment to research and development for its members — the largest operating railroads in North America. The primary objectives for this research have remained constant and are aimed strategically to enhance the safety, reliability, and efficiency of rail operations.

Most of the AAR's research is performed at the Transportation Technology Center (TTC), which is a federal laboratory and proving ground facility located near Pueblo, CO (Figure 1).

Figure 2. Participants in a recent AAR Annual Research Review discuss current findings from an investigation of wood crosstie performance during the onsite open house program.

TTC is owned by the U.S. Federal Railroad Administration (FRA). Under contract with the FRA, TTC is operated by the Transportation Techno-

logy Center, Inc. (TTCI), which is a wholly owned subsidiary of the AAR. Through this extremely effective and impactful public-private partnership, the AAR and FRA have worked together at TTC for nearly four decades.

TRANSFER OF KNOWLEDGE

Beginning in 1996, TTCI has invited the world to 23 annual research review conferences in Colorado. This forum is used to share the updated insights gained through TTCI's research activities. It also is an opportunity to receive input from an international cohort of stakeholders who are in common pursuit of similar objectives. The research review not only includes formal technical sessions, poster sessions and displays, but also an open house program onsite at TTC (Figure 2). The most recent review included 475 participants from 152 different organizations. This includes a strong international contingent — nearly 100 in attendance, representing 13 countries and four continents.

Figure 1. Photograph of the Transportation Technology Center near Pueblo, CO, USA.

NORTH AMERICAN RAIL'S STRATEGIC RESEARCH INITIATIVES

Currently the AAR pursues its primary objectives by funding and guiding a program of Strategic Research Initiatives (SRI). This structured program engages seamlessly with the full spectrum of research potential — from fundamental scientific investigation all the way through to implementation in revenue service. The program maintains a comprehensive portfolio of two dozen initiatives that reside within three thrust areas: infrastructure systems, mechanical systems, and operations systems.

In response to opportunity and need, the program quickly can activate any or all of the initiative areas. The initiatives maintain competence in essential disciplines, including but not limited to, track, substructure, bridges and tunnels, rolling stock, train operations, inspection technology, experimental and computational mechanics, materials science and metallurgy, and predictive analytics. While some initiatives focus on traditional disciplines, others are interwoven initiatives that involve large, multi-disciplinary teams. These teams best highlight the uniqueness of TTCI's innovation ecosystem. In fact, nearly two-thirds of the total SRI research effort is the cross-cutting work of these teams.

FACILITY FOR ACCELERATED SERVICE TESTING

A critical cross-cutting initiative in the SRI program is the Facility for Accelerated Service Testing (FAST). Launched in 1976, FAST operates up to 140-million gross tons per year on a durability test bed for railroad track, rail vehicles, and their component parts. At FAST, a 17,600-ton, full-scale train, comprising 3 SD-70 locomotives and 110, 315,000-pound cars, operates at 40 mph over a 2.7 miles of track termed the High Tonnage Loop (HTL) (Figures 3 and 4). The cars and the locomotives are on loan from AAR member roads. The AAR, individual railroads, and railroad suppliers (through in-kind contributions) have cooperatively funded the operations at FAST and its many test programs.

Figure 3. Photograph of the Heavy Axle Load Train at the Facility for Accelerated Service Testing at TTC.

Figure 4. Photograph of the High Tonnage Loop at the Facility for Accelerated Service Testing at TTC.

HIGH PERFORMANCE WHEEL STEELS

Over the last 10 years, the SRI program has been actively engaged in efforts to improve the safety, reliability, and performance of railroad wheels used in Heavy Axle Load (HAL) freight operation. This work includes both testing and computational modelling of the fatigue performance of wheels (Figure 5).

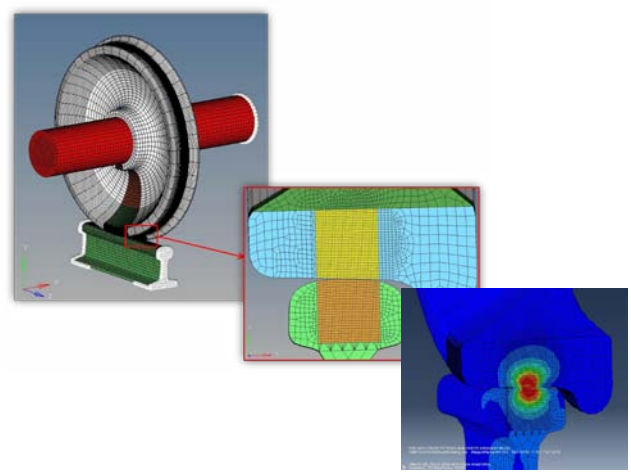


Figure 5. Renderings of a computer model of contact between a wheel and a rail.

RAILWAY BRIDGE TESTING UNDER HEAVY AXLE LOADS

Given the high capital costs of bridge replacement, recent SRI work has focused on the oldest bridges in the railroad infrastructure. The addition of a 100-year old riveted girder span at FAST is serving as a proving ground for studying the effectiveness of various repair methods (Figure 6).

Figure 6. Photograph of a steel bridge span at FAST.

The bridge testing at FAST also is providing valuable information about the effects of corrosion and the effects of impaired lateral bracing members. Effective inspection, maintenance, repairs and safety methods, including ongoing stress and deflection measurements, have successfully extended the service life of this bridge span at FAST.

AMTRAK, THE NATIONAL RAIL OPERATOR FOR INTERCITY PASSENGER SERVICE

The name "Amtrak" results from the blending of the words "America" and "track." It is properly used in documents with only the first letter capitalized. The railroad is officially known as the National Railroad Passenger Corporation.

HISTORICAL BACKGROUND ON AMTRAK

↗ Amtrak was created by Congress in 1970 to take over the majority of the intercity passenger rail services previously operated by private railroad companies in the United States. Those companies showed they had operated these services at a net loss of millions of dollars for many years. Operations began on May 1, 1971.

↗ On April 1, 1976, Amtrak acquired its Northeast Corridor property through the Conrail consolidation process.

↗ Learn more about Amtrak's past at History.Amtrak.com.

FISCAL YEAR 2017 HIGHLIGHTS

↗ Amtrak completed more than $420 million of state-of-good-repair and infrastructure renewal work, including significant track replacement, numerous projects in the New York City area and a new maintenance facility in Seattle.

↗ Began a major infrastructure renewal program at New York Penn Station, which accelerated important construction work. Amtrak installed 897 track ties, 1,100 feet of rails, 1,000 tons of ballast, seven turnouts (switches), four complex diamond crossings and 176 yards of concrete.

↗ Streamlined the senior management structure for increased organizational effectiveness, better alignment with the account structure created in the Fixing America's Surface Transportation (FAST) Act and greater transparency to customers and stakeholders.

↗ Continued to deleverage the Amtrak balance sheet, decreasing total debt from $3.3 billion at Sept. 30, 2007 to $1.2 billion at Sept. 30, 2017, a reduction of 64 percent.

↗ Launched the new, seasonal Amtrak *Winter Park Express*, linking Denver Union Station directly to the slopes of the famed Winter Park Resort in the Rockies.

↗ Completed "Project unITy," a corporate-wide effort to integrate, simplify and centralize technology and data services to better meet customer expectations and foster easier communication among Amtrak's national workforce.

BASIC AMTRAK FACTS

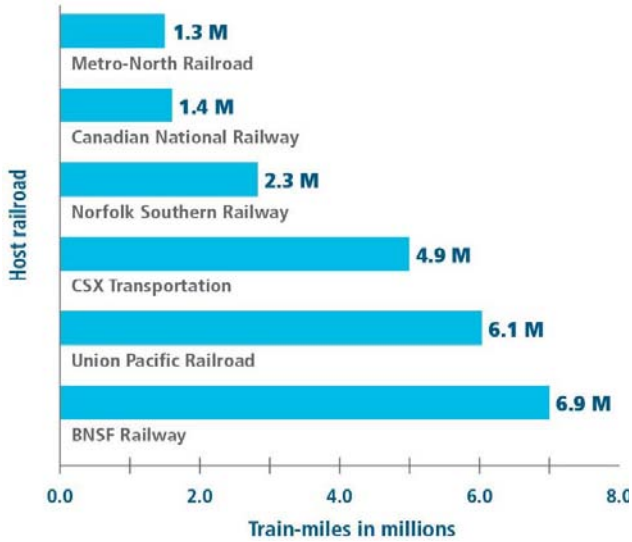
- Amtrak's mission is to deliver intercity transportation that helps move people, the economy and the nation forward. Amtrak is advancing its goal of being Americans' preferred mode of travel by running an efficient and effective business; modernizing the customer experience; and investing in infrastructure, the locomotive and car fleets, and stations and facilities.
- Amtrak is a federally chartered corporation, with the federal government as majority stockholder. The board is appointed by the President of the United States and confirmed by the U.S. Senate. Amtrak is operated as a for-profit company, rather than a public authority.
- The Amtrak Board of Directors appointed Richard
- Anderson president and co-chief executive officer effective July 12, 2017. He is the eleventh executive to lead America's Railroad® and assumed the position formerly held by Charles W. "Wick" Moorman IV, who transitioned to a role as co-CEO. (On January 1, 2018, Mr. Anderson assumed full CEO responsibilities, and Mr. Moorman took on a senior advisor role). Mr. Anderson spent 25 years in the aviation industry, where he last held the position of executive chairman of the Delta Air Lines Board of Directors after serving as the airline's CEO from 2007 to 2016. Mr. Moorman spent approximately four decades at Norfolk Southern Corporation (NS) and its predecessor, Southern Railway. He retired as chairman and CEO of NS in 2015.
- During FY 2017 (Oct. 2016-Sept. 2017), Amtrak customers took 31.7 million trips, another record year. On an average day, customers make nearly 87,000 trips on more than 300 Amtrak trains.
- Amtrak operates a nationwide rail network, serving more than 500 destinations in 46 states, the District of Columbia and three Canadian provinces, on more than 21,400 miles of routes. It is the nation's only high-speed intercity passenger rail provider, operating at speeds up to 150 mph (241 kph). Nearly half of Amtrak trains operate at top speeds of 100 mph (160 kph) or greater. The company has more than 20,000 employees.
- On average, 600 daily Thruway schedules with guaranteed connections via buses, vans, ferries and other modes extend Amtrak service to more than 400 communities not served directly by Amtrak trains in 38 states and Canada. In FY 2017, customers made 1.6 million Thruway trips (including Amtrak tickets sold for the NJ TRANSIT Atlantic City Line).
- In December 2015, for the first time in U.S. transportation legislation history, Amtrak reauthorization was included as part of the comprehensive federal surface transportation bill—known as the Fixing America's Surface Transportation (FAST) Act (P.L. 114-94).
- When included among U.S. airlines, Amtrak ranks No. 5 in domestic passengers carried.* In the Northeast Corridor (NEC), Amtrak has a very strong position in many markets that were previously dominated by air carriers. **Based on FY 2016 data; FY 2017 data forthcoming.*
  - Amtrak carried more than three times as many riders between Washington, D.C., and New York City as all of the airlines combined.
  - Amtrak carried more riders between New York City and Boston than all of the airlines combined.
- Amtrak-owned property outside the NEC spine (Washington-Boston) includes:
  - Springfield Line: A 60.5-mile segment of track between New Haven, Conn., and Springfield, Mass.
  - Harrisburg Line (also known as the Keystone Corridor): A 104.2-mile segment of up to 110 mph (177 kph) track between Philadelphia and Harrisburg, Pa.
  - Michigan Line: A 95.6-mile segment of up to 110 mph (177 kph) track between Porter, Ind., and Kalamazoo, Mich.
- In December 2012, a lease took effect between Amtrak and CSX Transportation under which Amtrak operates, maintains and dispatches approximately 94 miles of the Hudson Line—also known as the Empire Corridor (New York City-Albany-Niagara Falls)—between Poughkeepsie and Hoffmans (near Schenectady).
- Amtrak owns 18 tunnels (consisting of 24 miles of track) and 1,414 bridges, primarily on the NEC spine and connecting corridors.
- Amtrak owns three heavy maintenance facilities in Wilmington and Bear, Del., and Beech Grove, Ind. Other major maintenance facilities are located in Washington, D.C.; New York City and Rensselaer, N.Y.; Boston; Hialeah, Fla.; Chicago; New Orleans; Los Angeles and Oakland, Calif.; and Seattle.
- Amtrak is the only railroad in North America to maintain right-of-way for service at speeds in excess of 125 mph (201 kph), and its engineering forces maintain more than 350 route-miles of track for 100+ mph (160+ kph) service.
- Seventy-two percent of the miles traveled by Amtrak trains are on tracks owned by other railroads. Known as "host railroads," they range from large, publicly traded companies based in the U.S. or Canada, to state and local government agencies and small businesses. Amtrak

pays these host railroads for use of their track and other resources needed to operate Amtrak trains, with incentives for on-time performance.

- The company's growth over the past 10 years, especially on intercity corridors between 100-500 miles, indicates the tremendous opportunity of developing a robust, nationwide passenger rail system focused on city pairs.
- Amtrak was the first railroad to earn a five-year accreditation by the Emergency Management Accreditation Program. It recognized Amtrak's ability to bring together personnel, resources and communications from a variety of agencies and organizations in preparation for and in response to an emergency, in addition to obtaining the ability to measure those capabilities.
- For the third year in a row, Amtrak in 2017 earned a spot on *Forbes* magazine's list of "America's Best Employers."

Skilled employees at heavy maintenance facilities in Indiana and Delaware rebuild and overhaul a wide variety of cars and locomotives.

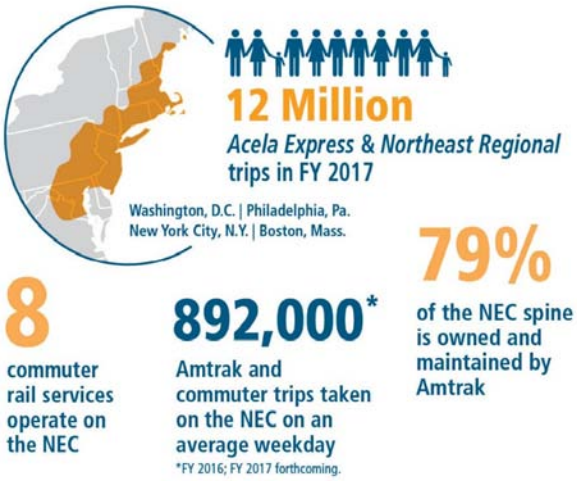
THE SIX LARGEST HOST RAILROADS FOR AMTRAK TRAINS



NORTHEAST CORRIDOR SERVICES

Amtrak's Northeast Corridor (NEC) is the busiest railroad in North America, with approximately 2,200 Amtrak, commuter and freight trains operating over some portion of the Washington-Boston route each day.

- Eighteen million trips were made by Amtrak customers on the NEC in FY 2017. This included all Amtrak trains that traveled over some portion of the NEC spine (Washington-New York-Boston) and connecting corridors to Harrisburg, Pa., Springfield, Mass., Albany, N.Y., and Richmond, Va.
- Amtrak owns and operates 363 miles of the 457-mile NEC spine. Trains regularly reach speeds of 125-150 mph (201-241 kph). Two sections of the NEC are owned by others:



  - The New York Metropolitan Transportation Authority (10 miles) and Connecticut Department of Transportation (46 miles) own 56 miles on Metro-North Railroad between New Rochelle, N.Y., and New Haven, Conn.
  - The state of Massachusetts owns 38 miles between the Massachusetts/Rhode Island border and Boston that is operated and maintained by Amtrak.
- Amtrak moved forward with efforts to modernize major station facilities on the NEC for improved operations and an enhanced customer experience. It advanced several projects as part of the Philadelphia 30th Street Station District Plan unveiled in June 2016; continued design and early action construction for a project to double passenger space in the Washington Union Station rail concourse; and selected a master development team for Baltimore Penn Station.
- Amtrak and its partners also advanced planning and design of the Gateway Program, a com-

prehensive suite of strategic rail infrastructure improvements in the New York City area. It will increase track, tunnel, bridge and station capacity, eventually creating four mainline tracks between Newark, N.J., and New York Penn Station, including a new, two-track Hudson River Tunnel. As envisioned, the Gateway Program will provide increased resiliency on the NEC, added reliability and additional capacity for future increases in commuter and intercity rail service.

- For the latest information on NEC projects and initiatives, visit nec.amtrak.com.

ACELA EXPRESS

- The *Acela Express*, Amtrak's premium service, is the fastest train in the Western Hemisphere, with a current maximum speed of 150 mph (241 kph) on two sections of its route between Boston and New Haven, Conn. (35 total miles). Its top speed between New York City and Washington, D.C., is 135 mph (217 kph).
- The name "Acela" comes from a combination of the words "acceleration" and "excellence." Approximately 49.1 million passengers have traveled on the fleet of 20 Acela Express trainsets in the 17 years since revenue service began on Dec. 11, 2000. During FY 2017, customers took more than 3.4 million Acela trips and generated nearly $596 million in ticket revenue.

ACELA EXPRESS 2021

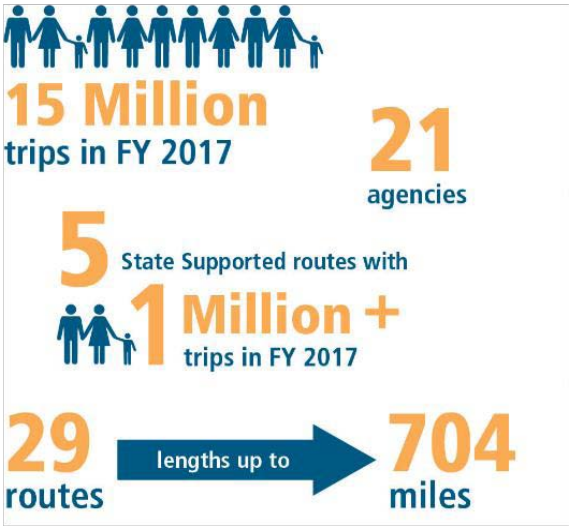
- Amtrak announced in August 2016 that it contracted with Alstom to produce 28 next-generation high-speed trainsets that will replace the equipment used to provide *Acela Express* service. The contract is part of $2.45 billion that will be invested on the NEC as part of a multifaceted modernization program to renew and expand the *Acela Express* service. The trainsets will operate initially at speeds up to 160 mph (257 kph) and will be capable of speeds up to 186 mph (299 kph). The manufacture of the trainsets will create 400 jobs in upstate New York; parts will come from more than 350 suppliers in more than 30 states, generating an additional 1,000 jobs. The first trainset should enter revenue service in 2021, and all trainsets are expected to be in service by the end of 2022.
- In addition to the trainsets, Amtrak is also investing in infrastructure needed to improve the onboard and station customer experience and accommodate increased high-speed rail service levels. Amtrak will invest in significant improvements at Washington Union Station, Moynihan Station New York, as well as track capacity and ride quality improvements to the NEC that will benefit all intercity and commuter customers. Amtrak will also modify fleet maintenance facilities to accommodate the new trainsets.

New high-speed trainsets will have one-third more seating. Image courtesy of ALSTOM SA 2017. Design&Styling | AVELIA LIBERTYTM

STATE SUPPORTED SERVICES

Amtrak receives funding from 18 states through 21 agencies for financial support of 29 short-distance routes (less than 750 miles). Section 209 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA) required Amtrak and its state partners to develop jointly a single, nationwide and standardized cost-sharing methodology to charge states for State Supported intercity passenger rail service.

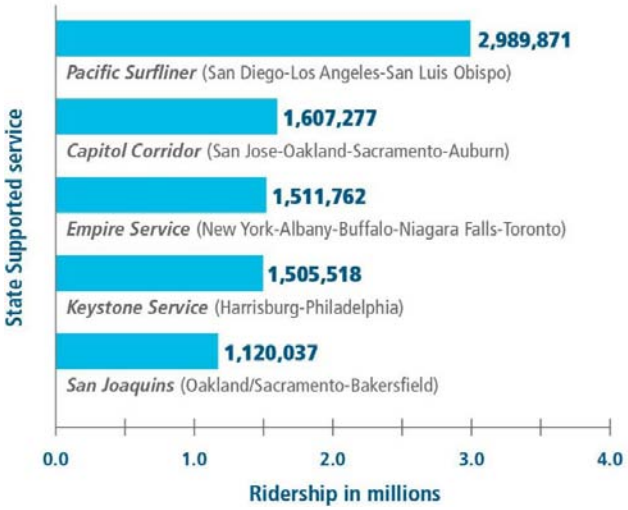
The PRIIA 209 methodology became effective in October 2013. Continued operation of State Supported routes is subject to annual operating agreements and state legislative appropriations according to Section 209.



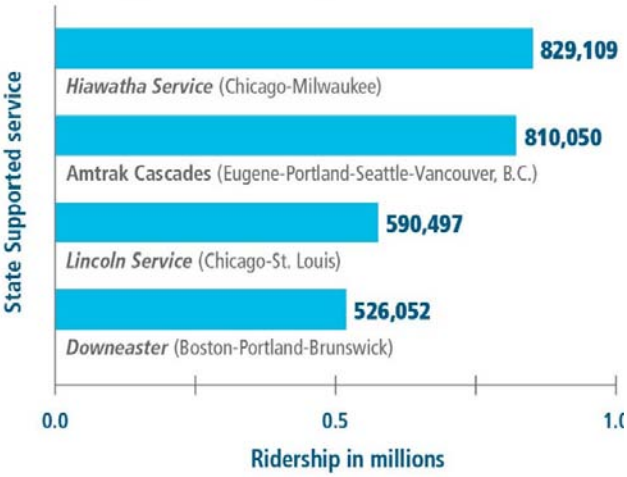
RIDERSHIP AND ONGOING PROJECTS

↗ Five State Supported routes had ridership that topped one million in FY 2017:

STATE SUPPORTED RIDERSHIP OVER ONE MILLION



↗ Four other State Supported services had ridership between one half-million and one million customers in FY 2017:



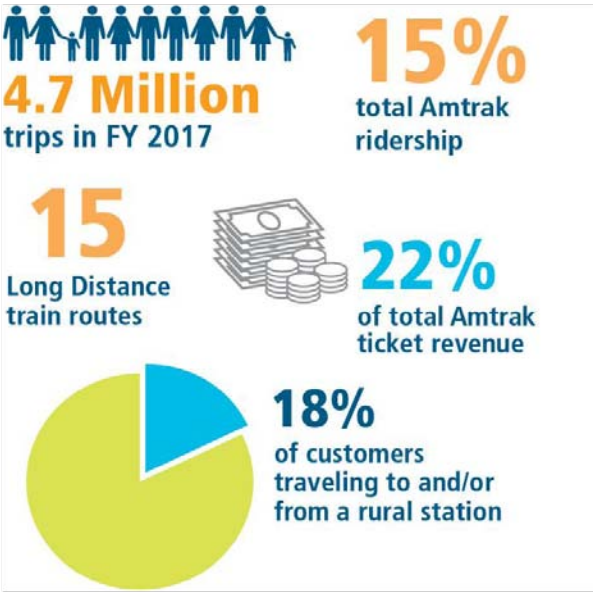
↗ Amtrak-operated, state-owned equipment* includes 122 railroad passenger cars and 23 locomotives. Amtrak Cascades service primarily operates with six Talgo trainsets with cars owned by Amtrak and the states of Oregon and Washington. In FY 2017, Amtrak began placing into service the first of 61 state-owned Charger diesel locomotives. Amtrak state partners also have 137 state-owned railcars on order from Siemens. **As of Jan. 2018.*

↗ In December 2012, the state of Michigan purchased 135 miles of right-of-way between Kalamazoo and Dearborn. It is operated and maintained, and is now fully dispatched, by Amtrak. The state and Amtrak have completed almost all infrastructure improvements required to operate this track at speeds up to 110 mph (177 kph). The only remaining major task is the installation of Positive Train Control (PTC). The 135 miles will then become an even more integral part of Amtrak's Michigan District, which also includes the Amtrak-owned 95.6-mile segment of up to 110 mph (177 kph) track from Porter, Ind., to Kalamazoo.

↗ Amtrak and the states of Michigan and Illinois are partnering to reduce travel times by increasing maximum train speeds wherever possible on the Chicago-Detroit and Chicago-St. Louis corridors. Currently, Amtrak trains can reach speeds up to 110 mph (177 kph) on a 96-mile portion of the Chicago-Detroit corridor in Michigan and Indiana. As additional track and signal work taking place on both corridors in FY 2018 is completed, more segments will experience speed increases (to 110 mph in Michigan and 90 mph in Illinois). This will ultimately result in trip time reductions of 30 minutes on the Chicago-Detroit corridor, and 15-20 minutes between Chicago and St. Louis.

LONG DISTANCE SERVICES

Amtrak operates 15 Long Distance trains whose routes range in length from 780 miles (*Capitol Limited*) to 2,728 miles (*Texas Eagle*).



- These trains provide the only service at nearly half of the stations in the Amtrak system and are the only Amtrak trains in 23 of the 46 states in the network.
- Amtrak is the only intercity passenger transportation service in an increasing number of communities that lack intercity bus and airline service.
- In May 2017, Amtrak designated a master developer for historic Chicago Union Station—the hub of western Long Distance services, as well as Midwestern State Supported routes—and neighboring Amtrak-owned properties. The conceptual design lays out three project phases that will include development of new commercial, office and residential space.

CONTRACT COMMUTER SERVICES

Amtrak is one of the largest operators of contract commuter services in North America; Amtrak provides either services and/or access for 13 commuter agencies.

- Amtrak operates commuter service for the following state and regional authorities:
  - Maryland Area Regional Commuter (MARC)
  - Shore Line East (Connecticut)
  - Metrolink (California)
- Amtrak provides services of various types for three other agencies:
  - Central Florida Commuter Rail Commission (SunRail): Maintenance-of-equipment
  - Massachusetts Bay Transportation Authority (MBTA): Maintenance-of-way and dispatching
  - Sound Transit (Washington): Maintenance-of-equipment
- Amtrak provides access (and in some cases, other services) for seven other agencies:
  - Long Island Rail Road
  - NJ TRANSIT (New Jersey)
  - Southeastern Pennsylvania Transportation Authority (SEPTA)
  - Delaware Department of Transportation (DelDOT) (operated by SEPTA)
  - Rhode Island Department of Transportation (RIDOT) (operated by MBTA)
  - Virginia Railway Express (VRE)
  - Metra (Chicago area)

Connecticut, Delaware, Maryland, New Jersey, New York, Pennsylvania, Rhode Island and Virginia make payments to Amtrak through transit agencies or state transportation departments for use of Amtrak-owned NEC facilities by commuter trains. These agencies or states also provide other funding for the NEC, including capital funds for infrastructure and/or stations. Amtrak has agreements for access and/or maintenance where Amtrak trains operate over locally-owned portions of the NEC in Connecticut, Massachusetts and New York.

Amtrak operates MARC Penn Line trains on the Northeast Corridor.

EQUIPMENT AND TRAINS

- Active Amtrak-owned or leased passenger equipment* includes 20 *Acela Express*® high-speed trainsets; 1,242 passenger cars including Amfleet®, Superliner®, Viewliner®, Horizon and other types; 80 baggage cars; 80 *Auto Train*® vehicle carriers; and 259 road diesel locomotives and 68 ACS-64 electric locomotives. Amtrak Cascades service primarily operates with six Talgo trainsets with cars owned by Amtrak and the states of Oregon and Washington. In FY 2017,

Amtrak began receiving new single-level dining cars that are part of a larger 130-car order that also includes sleeping (pending) and baggage (delivered) cars. **As of Jan. 2018.*

- Amtrak is a committed leader in the installation of Positive Train Control (PTC), a safety technology designed to match train speed to track conditions for improved safety. PTC is already activated on approximately 90 percent of Amtrak-owned infrastructure, including nearly all of the NEC. Most Long Distance and State Supported trains operate over rail infrastructure owned by various host railroads. In accordance with federal law, each owner is responsible for implementing the infrastructure-related elements of the PTC system by Dec. 31, 2018. When this is completed, Amtrak will activate the elements of the PTC system in its locomotives and cab cars.
- Even-numbered trains travel north and east, while odd-numbered trains travel south and west. Among the exceptions are the *Pacific Surfliner* trains, which use the opposite numbering system inherited from the Santa Fe Railway, some *Empire Service* trains and the *Downeaster* trains.

CUSTOMER AMENITIES

- Trains carrying 91 percent of all Amtrak customers offer complimentary AmtrakConnect Wi-Fi. In FY 2017, Amtrak introduced improved Wi-Fi service on *Acela Express* featuring increased bandwidth and speeds; the company is now focused on similar updates to other East Coast services.
- Many routes offer carry-on and trainside checked bicycle service. Find more details and the latest information about our bikes program at Amtrak.com/bikes.
- On many routes, Amtrak also offers customers the convenience of carrying small cats or dogs onboard. Find more details and the latest information about our pets program at Amtrak.com/pets.
- In FY 2017, Amtrak began an extensive overhaul of the train interiors on about 450 Amfleet I cars used on more than a dozen popular services in the Northeast and Midwest.
- A new national partnership with Lyft is just one way Amtrak is exploring opportunities to provide additional connectivity to and from trains.

Amtrak is on the web at Amtrak.com. For more information, the public may also visit us on Facebook, Twitter, Google+, Pinterest, Blog.Amtrak.com and GreatAmericanStations.com.

In FY 2017, Amtrak began an extensive overhaul of the train interiors on about 450 Amfleet I cars originally manufactured in the 1970s.

CHSRA, CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED RAIL AUTHORITY BRINGS NEW TRANSPORTATION OPTIONS TO THE NATION

The California High-Speed Rail Authority (Authority) is responsible for planning, designing, building and operation of the first high-speed rail system in the nation. California high-speed rail will connect the mega-regions of the state, and is contributing to economic development and a cleaner environment, creating jobs and preserving agricultural and protected lands. When complete, the system will run from San Francisco to the Los Angeles basin in under three hours at speeds capable of over 200 miles per hour. The system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations. The Authority is working with regional partners to implement a state-wide rail modernization plan that invests billions of dollars in local and regional rail lines to meet the state's 21st century transportation needs.

Hit by the worst economic recession since the Great Depression of the 1930s, the United States passed the American Recovery Reinvestment Act of 2009 (ARRA), an economic stimulus package designed to generate job growth through infrastructure investment. Along with supporting near-term investments — like road repairs, bridges and airport facilities — ARRA funds also supported early investments into the California High-Speed Rail Program, a visionary transportation infrastructure system aimed at connecting the state's megaregions while bolstering longer-term economic and clean energy goals.

California received $2.55 billion in ARRA funds and combined it with other state and federal funds to begin construction (including strategic investments in local and regional rail lines) on a high-speed rail system approved by California voters in 2008. California met the strict requirement to fully invest all ARRA funds by September 30, 2017, drawing in hundreds of private sector firms — including small and disadvantaged businesses — to begin work on the nation's first high-speed rail system. Setting into motion one of the largest public infrastructure projects in the country, the investment created thousands of well-paying jobs, infusing the state's economy with billions in economic activity.

More than three years have passed since the Authority officially broke ground on construction in California's Central Valley, the future system's midway point. Crews are currently making progress at more than a dozen sites spanning a 119-mile segment, as three design-build construction teams work between Madera and Kern Counties on contracts valued at nearly $4 billion.

As bridges and viaducts continue to rise towards the sky at multiple Central Valley sites, the Authority is working toward three fundamental objectives. One, to initiate high-speed rail passenger service as soon as possible. Two, to make strategic, concurrent transportation investments that will link over time and provide mobility, economic and environmental benefits at the earliest possible time. Three, position ourselves to construct additional segments as funding becomes available.

The 2018 Business Plan lays out an implementation strategy focused on meeting ARRA commitments by constructing the 119-mile segment and completing the environmental review for all project segments statewide by 2022. The plan also calls for extending the Silicon Valley to the Central Valley Line. Running from San Francisco to Bakersfield, this line would generate the highest ridership and revenue. By investing funds to develop 224 miles of high-speed rail ready infrastructure on these two lines, the system would see early benefits by reducing travel times on existing passenger rail systems, expanding clean electrified rail service, and preparing for testing and

potential high-speed rail operations in these two corridors by 2026-2027.

Additional next steps include completing project development work to refine the design, scope and cost for the Pacheco Pass tunnels (between Gilroy and Madera) and the extension to Merced, critical links between the Central Valley and the Silicon Valley. The Authority is completing important early works — such as geotechnical analysis — to reduce uncertainty and further "de-risk" the construction of the tunnels. The Authority will also continue to engage private and public sector expertise to examine and refine design options, thereby optimizing operational efficiencies and limiting costs.

Meanwhile, in accommodating the introduction of high-speed rail in Southern California, the Authority will invest remaining Proposition 1A "bookend funds" as a full partner in vital, high-priority projects along the Burbank to Anaheim corridor. These projects will improve freight, as well as local and regional passenger rail service, thereby enhancing transit connections, improving safety, and accommodating the introduction of high-speed rail service in the region. Investments include the Rosecrans/Marquardt Grade Separation Project and the Los Angeles Union Station Development project.

The Authority will also continue to leverage state funding committed to the project to pursue additional federal, state and private funding or financing to invest in the development of the high-speed rail system statewide.

Brian Kelly was selected to lead the Authority as Chief Executive Officer, a position he settled in on February 1, 2018. Prior to taking the helm, Kelly — widely considered the state's top transportation policy executive — served as California Gov. Edmund G. Brown Jr's transportation czar, leading the California State Transportation Agency.

A recent strategic partnership with DB Engineering & Consulting USA, a private sector operator, is another important Authority development, as the agency looks to ensure the system is designed to enhance ultimate commercial value and profitability.
With active construction sites, more than 2,000 laborers at work, millions invested in small businesses and a business plan to pull it all together, the state's high-speed rail program is far from an idea; it's a reality that is connecting and transforming California.

VIA RAIL CANADA, THE CANADIAN NATIONAL PASSENGER RAIL SERVICE

This year, VIA Rail is celebrating its 40th anniversary as Canada's national rail service dedicated to passengers. Though only four decades old, the service has seen its ups and downs. For example, in recent history, VIA Rail has experienced the effects of the widespread use of cars as well as the exponentially increasing movement of goods by railway across Canada. Both of these factors reflect a strong economy, which is good for Canadians, but can cause some challenges for the passenger rail industry.

Already, the use of the personal vehicle has peaked as highways and thoroughfares leading to and from major urban centers are packed bumper to bumper. And already we have watched as more and more people have been choosing the smarter option to leave their cars at home and take the train. The 21st century has been witness to the renaissance of passenger rail, and with it a necessary evolution of the relationship between passenger and freight transport.

VIA Rail currently operates on a network that is 97 per cent owned by other rail operators, primarily freight transportation companies. The rail network is shared, with priority going to the host. We have reached a pivotal moment, and VIA Rail has seized the opportunity to develop a long-term vision for rail in Canada, called High Frequency Rail, which takes into account the advancement of both passenger and freight rail industries. This plan is further described below. In the meantime, in order to maintain this upward trend, we will continue, as always, to work collaboratively with other transport providers.

HOW VIA RAIL BEGAN

VIA Rail Canada was incorporated in January 1977. As a wholly owned subsidiary of Canadian National (CN) at the time, it operated on a network that served approximately 1,200 regions coast to coast. It wasn't until the following year that the company became an autonomous Crown Corporation owned by the Government of Canada. Its mandate, as written in its 1978 annual Report and to which we still hold true, is to "Revitalize passenger rail services in Canada and manage and market them on an efficient commercial basis, reducing the financial burden on the Government." VIA Rail gradually acquired the former passenger services of CN and Canadian Pacific (CP) that same year, and on October 29, the first official VIA Rail train proudly displaying the company logo, transported passengers in Canada.

VIA RAIL BY NUMBERS (2017)

OVER 400 COMMUNITIES served across Canada
4.39 MILLION PASSENGER trips
514 DEPARTURES per week
426 TRAIN CARS
73 LOCOMOTIVES
Over **2,800 EMPLOYEES**
Growth in ridership **SINCE 2014: 15%**
Growth in revenue **SINCE 2014: 30%**

VIA RAIL TODAY

At 40, VIA Rail is better than ever. We have grown strong thanks to our solid roots and the exceptional work of all our employees who have helped us remain the safest, most environmentally friendly and productive intercity travel option for passengers over the years. We connect over 400 communities geographically, socially and ecologically, with the goal of becoming the backbone of sustainable travel in Canada.

Currently at VIA Rail, we are working to reinvent intercity passenger transportation in Canada for the good of the economy, the population and the environment. It is a challenging transformation, and serves as the basis of our vision to be a smarter way to move people. Our growth, particularly in recent years, shows that conditions are in our favour to meet this challenge, now more than ever.

VIA RAIL'S MODERNIZATION PLAN

Our transformation and renewal plan is progressing. Within the plan are projects to improve passenger experience from beginning to end. Internally, we are reviewing and revamping the customer journey, from how potential passengers interact with VIA Rail to the current reservation system. Meanwhile, we also have many train car improvement projects now underway to replace the train cars that are reaching the end of their useful life and renovate others to improve accessibility, comfort and safety. In conjunction with these, our High Frequency Rail project would aim to transform passenger rail in Canada.

BETTER SERVICE FOR ALL: HIGH FREQUENCY RAIL

Though our train car improvements (detailed below) will greatly enhance the onboard experience, they do not address the growing challenge of shared rail. As the demand for both passenger and freight increase, capacity diminishes, on time performance deteriorates and all parties suffer.

A key component of VIA Rail's plan to transform passenger rail service for Canadians is through the control and operation of tracks dedicated to passengers, which we call High Frequency Rail (HFR). HFR would provide communities within the Toronto-Ottawa-Montréal -Québec City corridor with improved scheduling, more frequent service, reduced trip times, and better on-time performance.

Through HFR, VIA Rail would acquire or build tracks whose priority would go to passenger trains, though the benefit of maintaining these tracks at a passenger train level would be shared. During off times, this right-of-way could be used by freight, which thanks to the elevated maintenance of the infrastructure, would be able to travel more quickly to destination. This is just one example of how freight and passenger industries can work together to take full advantage of the available infrastructure.

In its 2018-2019 budget, the Government of Canada also allocated funding for the conclusion of studies toward HFR, which will help them in their decision-making process.

NEW TRAINSETS, MORE ACCESSIBILITY

In one of the most exciting announcements in recent history for VIA Rail, the 2018-2019 Federal Budget recognized its efforts through a historical investment in the corporation. The budget confirmed funding for the acquisition of a brand-new fleet of modern trains to service our busiest corridor between Quebec City and Windsor, in which 94% of passenger trips are taken. By 2024, VIA Rail will be welcoming clients onto a more comfortable and accessible fleet.

Furthermore, we have been able to confirm several train car refurbishment projects, destined for use on our long distance train services, which represents an investment of close to $150 million.

First, VIA Rail awarded a contract to convert and retrofit 17 of our train cars to full accessibility. This new generation of cars will each be equipped with two wheelchair lifts, an accessible washroom, two wheelchair spaces and display screens (including for the hearing-impaired), allowing for two passengers in wheelchairs to travel together. Fully accessible cars will promote social inclusivity, increase mobility for all, and ensure that we offer the same exceptional level of service to all our passengers, taking into account their individual needs. The timeline for this projects calls for the gradual deployment of the new cars from late 2019 through early 2020.

Second, we have also confirmed the contract award for the complete renovation of 25 of our Economy class cars. The upgraded cars will significantly improve the experience for our passengers, and will also follow a similar timeline as above, through the gradual deployment of the renovated cars from late 2019 through early 2020.

Finally, VIA Rail has been working on a complete refurbishment of a further 33 cars and 15 locomotives for improved comfort and efficiency, at its maintenance center in Montreal. Some of these cars are already in use, with the project continuing until early 2020, when all cars and locomotives will be operating.

What is most exciting about these announcements is how directly they benefit our passengers. Within a few years, passengers will see and feel the transformation we are undergoing in order to serve them, and our country, better.

Through all of these initiatives VIA Rail endeavours to change the face of transportation in Canada.

FINAL WORD

VIA Rail has reached new heights, owing to its solid roots and its renewed vision to offer a safe and sustainable transportation option Canada-wide. We are now at a pivotal moment; passenger rail has been called upon to stimulate inclusive growth by providing universal accessibility, creating jobs, boosting the economy and serving as an economic, social and environmentally-friendly link between hundreds of communities. We are determined to promote this shared project: to keep Canada at the top of the list of the best countries in which to live.

At 40, VIA Rail is transforming to lead Canadians towards a more sustainable future.

The future is on board!

OUR BUSINESS AT A GLANCE

VIA Rail operates Canada's national passenger rail service on behalf of the Government of Canada and provides a safe, cost-effective and environmentally responsible service from coast to coast.

OUR NETWORK AND WORKFORCE: KEY ASSETS

(UPDATED ON APRIL 18, 2018)

FLEET

73 LOCOMOTIVES
Including two switchers (a small locomotive used to "switch" equipment around)

428 TRAIN CARS
(in and out of service)

- PASSENGER CARS
- SLEEPER CARS
- DINING CARS
- LOUNGE CARS
- BAGGAGE CARS

RAIL

VIA RAIL OPERATES ON A **12,500-KM** RAIL NETWORK

97% of the network is owned and operated by railway partners, primarily CN and CP

3% is owned and operated by VIA Rail

PASSENGERS

4.39 MILLION TRIPS
taken by VIA Rail passengers in 2017

1.5 BILLION KILOMETRES COVERED

BUILDINGS

121 TRAIN STATIONS
Including 54 Heritage stations

4 MAINTENANCE CENTERS

6 REGIONAL OFFICES

1 HEAD OFFICE

EMPLOYEES

2,899 EMPLOYEES

COMMUNITIES SERVED

OVER **400** COMMUNITIES SERVED ACROSS CANADA

INTERNATIONAL UNION
OF RAILWAYS