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Don't miss previous issues! ☐

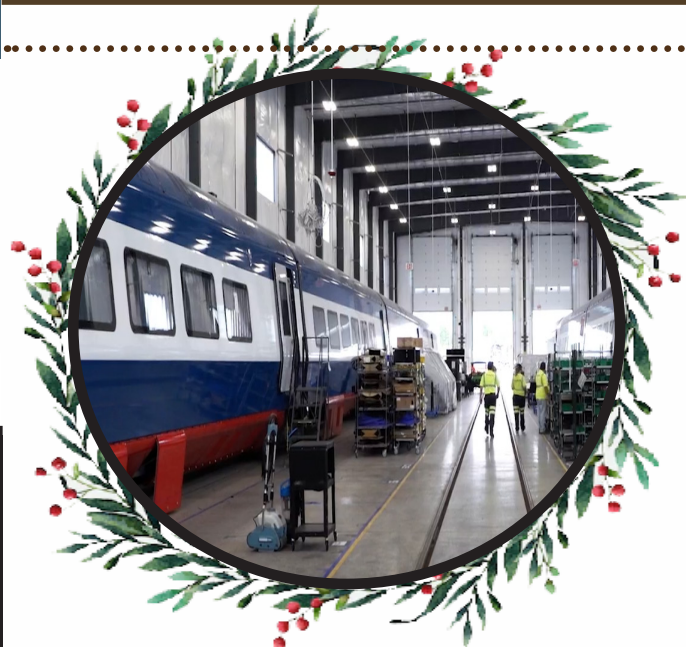
**ISSUE #37, DECEMBER 2023**





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2024



“Amtrak ridership continues to set post-pandemic records thanks to our customers who were anxious to travel again and attracted to the many benefits of train travel. This resurgence was made possible by our dedicated employees, our many state and host railroad partners, and ongoing support from the Biden Administration and Congress,” said Amtrak CEO Stephen Gardner. “We’re inspired by the soaring demand for intercity passenger rail and are eager to continue connecting more people and places.”

*On the front cover:*

SHOWN HERE, AN AFTERNOON GLIMPSE OF AN SIEMENS ALC-42 CHARGER IN MINNESOTA WITH A CHILL IN THE AIR. ADVANCED PROCUREMENT FOR NEW AND UPGRADED MAINTENANCE FACILITIES IN BOSTON, NEW YORK CITY, PHILADELPHIA, SEATTLE AND WASHINGTON, D.C., AND CONTINUED PLANNING FOR UPGRADES TO OVER A DOZEN SMALLER SITES AROUND THE COUNTRY.

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# A MESSAGE FROM THE CHAIR:



## HS&IPR *Committee & Friends*

As this edition of Speedlines goes to print, there is great news to celebrate. The Federal Railroad Administration (FRA) announced the long-awaited (but only slightly delayed!) announcement of awards under the Federal-State Partnership/North East Corridor (NEC) Program, the Corridor Identification Program and Federal-State Partnership/National program pursuant to the Infrastructure Investment and Jobs Act (Public Law 117-58), more commonly referred to as Bipartisan Infrastructure Law (BIL). This edition of SPEEDLINES provides a summary of these grant awards and the projects they help fund.

These awards represent approximately \$30 Billion of investments authorized under the BIL. APTA's High-Speed and Intercity Passenger Rail Committee hosted dozens of programs/conferences/virtual meetings over the past two years since passage of this landmark legislation, helping educate our membership and providing input to the FRA as it considered how best to allocate this historic level of funding.

Our members firmly believe that the American public truly appreciates the investments made under the BIL, and in short order. As such we advocated providing sufficient funds to projects that are ready to go to advance their implementation materially, while providing much-needed momentum money for projects in the Federal pipeline.

Congratulations go to the ten Federal-State Partnership National awardees, which included \$8.2 billion in funding to advance projects in Alaska, California (CA HSR), Maine, Montana, Nevada (Brightline West), North Carolina, Pennsylvania and Virginia as well as the 69 corridors selected for \$500,000 planning grants under the Corridor ID Program. In addition, the Northeast Corridor received \$16.4 billion in funding to advance capital projects that reduce the state of good repair backlog, improve reliability, safety and service delivery and performance.

For decades the United States has lagged behind Europe and Asia in the deployment of intercity passenger rail, and particularly high- and higher-speed rail. While these recent announcements won't allow us to join the first tier of HSR nations overnight, they are a welcome and overdue opportunity to bring to US citizens the safe, energy-efficient and environmentally-friendly mode of transportation available anywhere.

As you read this issue of Speedlines, you'll find additional details about these programs and what they mean to our country.

*Chris Brady*







# Transportation

## U.S. TRANSPORTATION DEPARTMENT ANNOUNCES MORE THAN \$8B FOR HIGH-SPEED RAIL, PIPELINE GRANTS

Transportation's Federal Railroad Administration (FRA) announced having awarded \$8.2 billion in grants for high-speed rail projects.

The grants will fund 10 passenger rail projects across the country, officials said. Funded by the Federal State Partnership for Intercity Passenger Rail (Fed-State National) program, the grants are designed to advance high-speed rail corridors and fund improvements to existing rail corridors that will expand service and performance. Officials said the grants fund projects delivering high-speed rail service in California's Central Valley, creating a new high-speed rail corridor between Las Vegas and southern California, making major upgrades to existing rail corridors between Northern Virginia and the Southeast through the Northeast Corridor, and investing in Chicago Union Station as a step toward future investment into the Midwest corridors hub, among others.

## U.S. TRANSPORTATION DEPARTMENT AWARDS \$645M IN COMMUNITY GRANTS FOR RURAL TRANSPORTATION, MOBILITY PROJECTS



U.S. Secretary of Transportation Pete Buttigieg, Gov. Kathy Hochul, and MTA Chair Janno Lieber tour a Second Avenue Subway tunnel in November. Thanks to \$3.4 billion in federal funding, the second phase of the Second Avenue Subway accelerated this year. The new section, from 96th to 125th streets, will have three new stations and serve more than 300,000 riders per day.

## SECOND YEAR OF RURAL SURFACE TRANSPORTATION GRANT PROGRAM FUNDS 18 PROJECTS FOR SAFETY, ACCESSIBILITY AND CONNECTIVITY IN RURAL AREAS

Rural roads face a disproportionately high rate of fatalities, and a significant proportion of rural roads and bridges are in poor condition. Today's awards will improve the safety and reliability of movement of people and freight, as well as improve quality of life for rural residents, through investment in critical roads, bridges, and other transportation systems.

The Rural Program represents a keystone of the Administration's commitment to repairing and improving rural transportation systems. President Biden's infrastructure law made more than \$44 billion available to help rural communities repair and improve their roads, bridges, airports, ports, and transit systems.

"Rural communities face some of the toughest transportation challenges, yet are often left out of major federal investments, a pattern that we are changing that under President Biden's leadership," said U.S. Transportation Secretary Pete Buttigieg. "The grants we're announcing today will make transportation in rural communities better, safer, and more reliable."



# SPAIN

THE SPANISH NETWORK IS THE LEADER IN EUROPE AND THE SECOND LARGEST IN THE WORLD.



A country that has built itself to be the longest high-speed rail network in Europe and the second longest in the world, continually advances and currently has a span of approximately 2,500 miles (4,000 km). The King of Spain, King Felipe VI, and top government ministers officially shared in the opening of a new railway line recently which would link the Northern province of Asturias to the rest of the Spanish high-speed network.

Like most global networks, Spain experienced the economic effects of the pandemic with remote working conditions but, the enhanced services have brought on increased ridership and record-breaking passenger capacity over the past few years. There has been a transformation across Spain surrounding opening the 1992 operation of the first line connecting the cities of Madrid, Córdoba and Seville. Years of construction engineering a high-speed rail line under mountains has opened and Spain's tourism remains successful due to rich cultural attractions and exceptional infrastructure. Spain's urban centres are experiencing growth, and these trends not only are shown via commuters, but the country's overall growth.

Spain has invested in nearly \$58b in building its network, with one in four euros coming from EU funding. Since late November 2023, three companies have been operating on the Spanish high-speed rail network, marking a first in Europe. The choice to open to competition was made by Madrid, which seeks ways to recoup its significant investments in rail.



Air Canada introduced new air-to-rail booking options for travellers flying to France, Germany, Switzerland and Austria following a series of new railway and distribution partnerships.



Hong Kong MTR announced on December 27 that – starting from January 10, 2024 – the number of high-speed trains between Hong Kong and Shenzhen will be increased.



Italy's primary train operator, Trenitalia, is testing a new route that would connect Venice to neighboring Slovenia's capital city of Ljubljana.

## CONNECT NEC PROGRAM

The Northeast Corridor Commission released CONNECT NEC 2037 (C37), which identifies a commitment over the next 15 years for capital investments along the 457-mile NEC serving the nation's most densely populated region and supports a \$3 trillion economy.

C37 is an update to C35, completed in 2021, assessing a NEC-wide rail service and state-of-good-repair goals and the infrastructure investments necessary to meet them. "C35's level of collaboration and credibility encouraged Congress to allocate historic levels of funding for the NEC in BIL [the Bipartisan Infrastructure Law]," the Commission reported. "C37 defines the plan in much greater detail, updates service goals based on new travel trends, provides additional analysis of workforce and other resource constraints, and refines future funding needs."



**"Infrastructure is the foundation that makes it possible for Americans to thrive and live lives of their choosing."**

*—Secretary of Transportation, Pete Buttigieg*



## Amtrak, partners awarded \$2.1B to improve passenger rail across country

Amtrak will receive \$108.5 million for station and service upgrades. Another \$2 billion will go to the company's partners in North Carolina, Virginia, Pennsylvania and Maine for infrastructure up-

grades on Amtrak and host railroads. Another \$34.5 million will go to 39 states and localities for the planning and development of nearly 70 new and improved inter-city passenger rail corridors.

"AMTRAK RIDERSHIP IS SOARING, AND WE'RE ADVANCING PLANS TO FURTHER ENHANCE AND EXPAND OUR SERVICES ACROSS THE UNITED STATES WITH OUR VARIOUS PARTNERS, THANKS TO THESE GRANTS," STEPHEN GARDNER, AMTRAK CEO SAID. "WE'RE EAGER TO BRING THE BENEFIT OF AMTRAK'S NETWORK AND EXPERIENCE TO SUPPORT STATES AND LOCAL COMMUNITIES AS THEY WORK TO BRING INTERCITY PASSENGER RAIL TO NEW COMMUNITIES ACROSS AMERICA."

## FRA ANNOUNCES \$16.4B OF RAIL FUNDING, REBOOT OF HIGH-SPEED RAIL PLANNING THROUGH SOUTHEAST CONNECTICUT AND SOUTHERN RHODE ISLAND

Federal Railroad Administration announced \$16.4 billion of funding for passenger rail projects along the Northeast Corridor, including \$827 million to replace the Connecticut River Bridge, and additional

funding to reevaluate and finalize high-speed rail options across southeast Connecticut and southern Rhode Island.

The federal funding, provided in the 2021 Bipartisan Infrastructure Law, will pay for 25 projects along the Northeast Corridor, including projects to replace or upgrade 12 century-old major bridges and tunnels. Among the projects receiving funding are projects to replace the Devon and Saugatuck River Bridges.



IN MEMORIAM  
RINA N. CUTLER

*A celebration of Life. Her knowledge of the issues, skill at building coalitions, and ability to work towards a common ground.*

*Ms. Cutler was an advocate for women in government and a mentor to many. She served under Philadelphia Mayors Rendell and Nutter, and was celebrated for her innovative improvements to the city's airport, infrastructure, and overall quality of life within several major cities and a major contributor in transportation organizations including [WTS International](#).*



## SERBIA'S HIGH-SPEED RAILWAY TO OPERATE IN 2024



The Hungarian capital of Budapest will be reachable and easily traveled from Serbia's Belgrade thanks to the Chinese-backed high-speed rail project. After the completion and opening of the whole railway line, the travel time between the capitals of Hungary and Serbia will be shortened from 8 hours to roughly 3 hours, which greatly improves the travel conditions of residents along the line, promote economic and social development,

strengthen connectivity between Hungary and Serbia, and expand economic and trade cooperation and exchanges. The high-speed train units are built specifically for the Hungary-Serbia railway, using a reliable technology that complies with European interoperability technical standards. They offer features such as greater intelligence and comfort and are environmentally friendly. This also marks the first export of high-speed train units with a speed of over 200kph from China to Europe. It is of great significance to deepen mutually beneficial cooperation between China and Europe. Scheduled to be put into use by 2025.

## Poland's bold initiative is to construct a 140-kilometer long high-speed rail line linking up the country's major cities.



Poland has announced plans to build a new high-speed rail line linking some of its major cities.

The government has earmarked €37 million for the project, which will see the construction of 140 km (87 miles) of track and a four km (3 miles) long tunnel.

The ambitious scheme also includes the construction of a 'mega-airport' located between the capital Warsaw and the city of Łódź to function as a central

transit hub. This new 140-kilometre high-speed rail route is set to link up some of Poland's most attractive cities connecting Warsaw with the cities of Łódź and Wrocław. The rail route is part of the wider Solidarity Transport Hub (CPK) Project, which will see the construction of an airport between Warsaw and Łódź. The Polish government plans to make the transport hub 'one of the largest in Europe'.



# BRIGHTLINE WEST

## PASSENGER RAIL FROM SOUTHERN CA TO LAS VEGAS, NEVADA

Contribution By: Al Engel, P.E.

Passenger Rail from Southern CA to Las Vegas, NV - Brightline West's state-of-the-art stations will serve residents and visitors throughout Las Vegas and Southern California with convenient locations in Las Vegas, Apple Valley, Hesperia and Rancho Cucamonga.

The goal to establish passenger rail service from southern California to Las Vegas has been rather elusive over the last several decades. The last service to operate was the Las Vegas Limited in 1976 which was operated by Amtrak and ran for 4 months. The journey time was 7 hours 25 minutes. It was the last in a series of excursion trains which ran between 1972 and 1976 that served the Los Angeles-Las Vegas market. Since that time there have been a series of proposals by Amtrak and some private operators to bring back rail service. Finally, a high-speed line following the Palmdale-Apple Valley-Las Vegas route was included in the 2018 California State Rail Plan as part of the 2040 timelines projects. The state then issued tax-exempt, private activity bonds to XpressWest. And that step evolved in the Brightline West project with a line running from Rancho Cucamonga to Las Vegas having intermediate stops in Hesperia and Victor Valley. The project will partner with both California High Speed Rail Authority and Metrolink to provide additional connectivity with Palmdale and L.A. Union Station.

Brightline West has already invested \$600 million in all critical station land and alignment right of way, permits and environmental



approvals plus the engineering and pre-construction planning. The \$12 billion project will be funded with a \$3.75 billion federal-state partnership grant with the remaining 70% to be privately financed. Ground breaks this quarter and the project calls for service to begin in time for LA 28 Olympics. On December 4, 2023 the US DOT announced a federal grant of \$3.0 billion to be awarded to Brightline. Wes Edens, founder and chairman of Brightline, called the award "a historic moment that will serve as a foundation for a new industry, and a remarkable project that will serve as the blueprint for how we can repeat this model throughout the country." Sen. Catherine Cortez Masto (D-Nev.) added in a statement, "Connecting Las Vegas and

Southern California by high-speed rail will create tens of thousands of good-paying union jobs, boost our Southern Nevada tourism economy, and finally help us cut down on I-15 traffic." Brightline West studies estimate that 3 million cars will be removed annually from I-15.

This project will inaugurate true American high-speed rail. It's all-electric and capable of 186 mph or higher speeds providing a trip time well below 2 hours. Ninety-five percent of the project will be sourced and bought in the U.S. Union agreements are in place to support 10,000+ field jobs and 900 operations jobs. Zero emission trains using electric power will result in 400,000 tons of CO2 reduction. What is more, there will be a significant reduction in highway-related deaths and injuries.



# VIRGINIA HSR

VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION

Contribution By: Jennifer Debruhl

The Virginia Department of Rail and Public Transportation (DRPT), the Federal Railroad Administration, and Amtrak have coordinated to develop a plan to upgrade existing track and signaling systems, and to construct new track. The goal is to offer high-speed rail between Washington, DC through Richmond to Raleigh, North Carolina, and to offer service from Richmond to Hampton Roads as well.

The Commonwealth of Virginia initiated its Transforming Rail in Virginia Initiative in December 2019 as an innovative and forward-looking plan to give Virginians an alternative to traveling along our congested highways and interstates. The initiative calls for moving Virginians by using an existing rail corridor that will increase passenger and commuter rail substantially while eventually separating freight and passenger rail services.

One year after the passage of the Passenger Rail Investment and Improvement Act in 2008, the Commonwealth launched its first state-supported Amtrak Virginia service between Washington, D.C., and Lynchburg. This service exceeded its predicted 30,000 passengers in its first year – with more than three times that many passengers traveling. It became clear that Virginians embraced rail as an alternative way to travel.

Move ahead about a decade and Virginia faced growing – and unsustainable – traffic congestion on its interstates and highways. When presented with plans to pour more asphalt for more roads – which would be overcrowded before they were even completed – we looked for another option and turned to rail.

The Virginia General Assembly created the Virginia Passenger Rail Authority (VPR) in 2020 to promote, sustain, and expand the availability of passenger and commuter rail service in the Commonwealth. Through Transforming Rail in Virginia, VPR works with partners at Amtrak, CSX, Norfolk Southern, and Virginia Railway Express (VRE) to expand service on existing corridors and build new infrastructure that will increase the number of trains operating around the state and make those trains more reliable.

VPR began this expansion by purchasing rail right-of-way from its freight partners. In the past two years, VPR has acquired nearly 500 miles of railroad right-of-way in corridors along I-95, I-64, I-85, I-81, and I-66. In Northern Virginia, the goal is to establish a passenger rail corridor that is separate from the freight right-of-way. Separating these two distinct services will improve on-time performance for both. Additional right-of-way acquisitions will allow for expansion of service from Roanoke to the New River Valley and the creation of a new, more direct route between Richmond and Raleigh, North Carolina.

By purchasing railroad right-of-way, VPR now has the unique opportunity to own these valuable resources and further enhance rail capacity, which will lead to increased passenger and commuter rail service and, in the end, better connected communities.

With the newly acquired right-of-way, VPR may now begin the process of improving the rail infrastructure, which will lead to improved service. This new infrastructure begins in Northern Virginia, where the train congestion must be addressed before any new service can begin anywhere in the Commonwealth.

## I-95 CORRIDOR

The portfolio of projects in Northern Virginia includes additional tracks, sidings, rail bridges, and a bypass structure. The plans here are ambitious but necessary. The planned passenger rail improvements will extend along the corridor from L'Enfant just outside of Washington Union Station, across the Potomac River, and south to Spotsylvania County.

The projects along the I-95 corridor are divided into four phases based on the anticipated timing of completion and commencement of services. Projects planned in Phases 1 and 2 will be completed by 2030. Beginning at L'Enfant, a fourth track and station





improvements will make travel more convenient for both Amtrak and VRE passengers.

Moving south, the next project is the largest: the new Long Bridge across the Potomac River. While this \$2.3 billion project sounds like just one bridge, it is a combination of eight rail bridges crossing the river and I-395. The approximately 1.8-mile project also includes a pedestrian/bicycle bridge and related railroad infrastructure between Arlington, Virginia, and Washington, D.C. Construction is scheduled to begin in 2024. Once the project is complete, there will be four tracks across the Potomac: two for passengers on the new bridge, and two for freight on the existing CSX bridge. This will allow Virginia to offer almost-hourly Amtrak Virginia service between Richmond and Washington, D.C.

The Long Bridge Project will feed into improvements in Alexandria where VPRA will add a fourth track and replace the aging railroad bridges just north of the King Street Amtrak Station. Next spring, construction will begin on the fourth track, a six-mile section in Alexandria. This segment will have multiple ongoing projects in the next few years, including replacement of rail bridges over King Street and Commonwealth Avenue in Old Town Alexandria, improvements to the platforms at the Alexandria

and Crystal City stations, and a pedestrian bridge connecting Crystal City to Reagan National Airport. Not all of these are VPRA projects, so VPRA is working closely with its partners at VRE, CSX, Arlington County, and the City of Alexandria, among others.

Further south, the Franconia-Springfield Bypass will alleviate train interference at one of the most congested points in Virginia. Through the \$405 million project, VPRA will construct an approximately 0.9-mile-long, dedicated passenger rail bridge located just south of the Franconia-Springfield Metro station. The flyover bridge, which will cross over two existing freight tracks, will be owned by VPRA, and will allow passenger trains to cross over the existing freight tracks to reach station stops on the opposite side. The project will provide a connection for passenger trains between the west side of the corridor north of the bridge and the east side of the corridor south of the bridge, providing improved service for both passenger and freight trains through the area. Construction is expected to begin in 2024.

Further south, infrastructure improvements focus on additional tracks and sidings, which will improve train movements. These projects will add capacity to the passenger rail corridor south to Spotsylvania. Due to the location along the eastern seaboard, every train traveling from Massachusetts to

Florida passes through this corridor in Virginia. These infrastructure projects will improve rail service in Virginia and the entire east coast.

#### NEW RIVER VALLEY SERVICE EXPANSION

Rail service returned to Roanoke in October of 2017 when the Commonwealth's Amtrak Virginia service extended from Lynchburg. The popularity of the service ignited calls to extend the service even farther, down to the New River Valley. In June 2022, VPRA reached an agreement with Norfolk Southern to purchase 28 miles of right-of-way and tracks along the Virginian Line from the Salem Crossovers west of Roanoke to Merrimac (Christiansburg). The agreement includes plans to increase and expand rail service to the New River Valley through infrastructure improvements, including a new passenger platform. Once complete, the New River Valley will have passenger rail service for the first time since 1979.

Currently, the project is under environmental review to determine the best route and the most viable location for a station stop. The next stage of the process will also include an assessment of additional infrastructure needed to support the service expansion, which includes track construction alternatives from the Virginian Line to the Blacksburg



Branch, multimodal connections to the station, and a layover facility for passenger trains. After the environmental review and preliminary design, a final site alternative will be identified and VPRA will move forward with engineering and construction.

#### RICHMOND TO RALEIGH

The Richmond to Raleigh Project is a collaboration between VPRA and North Carolina to develop the S-Line corridor for future high-performance rail service between Richmond and Raleigh.

The S-Line corridor is currently out-of-service but once hosted dozens of daily freight and passenger trains and served as a lifeline for its surrounding communities. The corridor is a critical missing link to completing the buildout of the Southeast Corridor and meeting federal and state goals of improving safety, providing economic opportunities, and

environmentally-sound transportation options. Efforts are underway by VPRA and the North Carolina Department of Transportation to return the S-Line to service as a functioning passenger rail corridor. In 2020, the Commonwealth of Virginia purchased 75 miles of S-Line right-of-way between Petersburg, Virginia, and Ridgeway, North Carolina, to complete the link between Richmond and Raleigh.

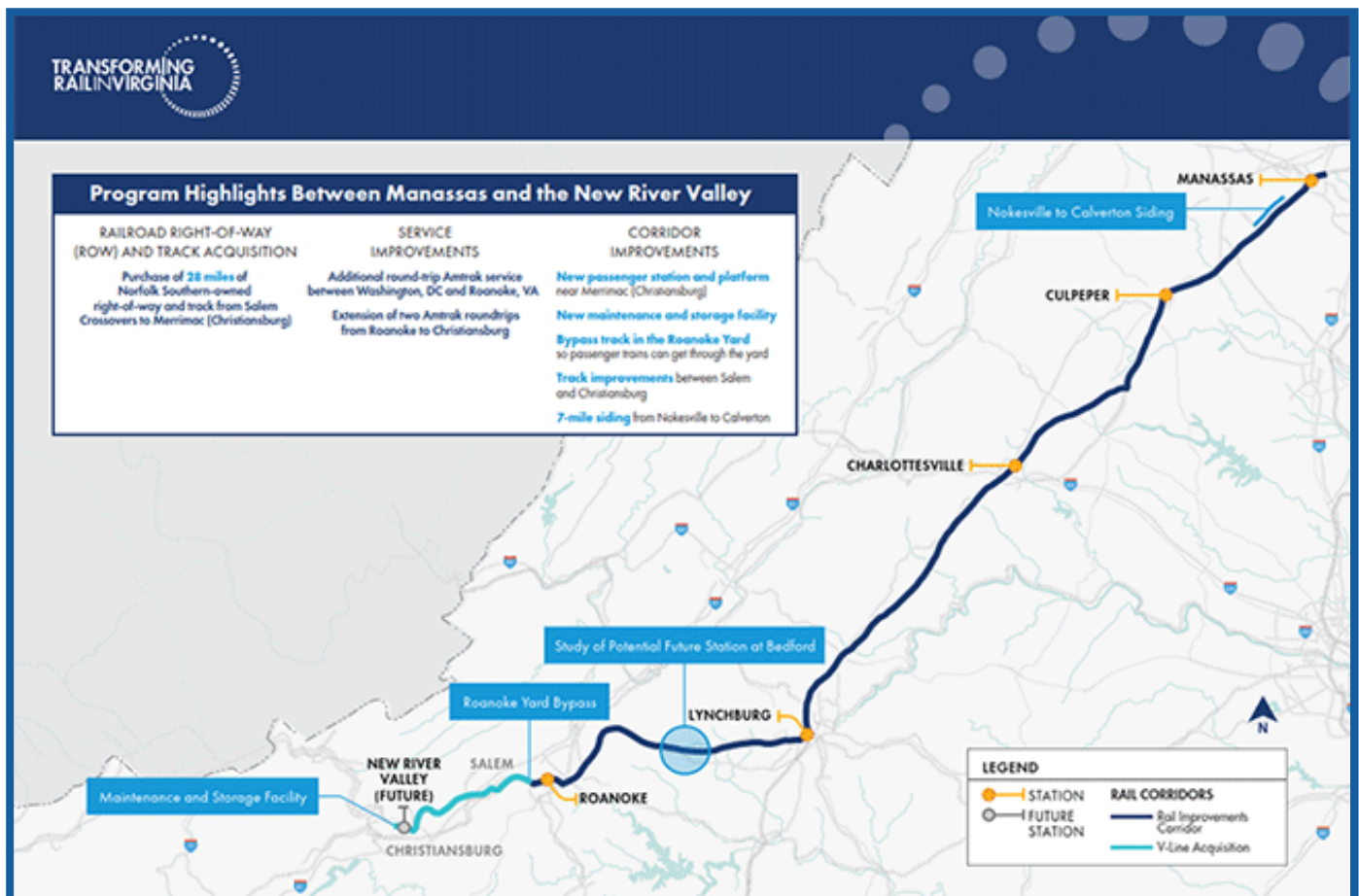
The Richmond to Raleigh Project is in the early design stage. VPRA will put out a procurement opportunity for further design of the rail corridor between Petersburg and the VA-NC state line soon.

#### RIDERSHIP

Virginians need and want passenger rail. During the Commonwealth's last fiscal year, 1.26 million people

traveled on the state-supported Amtrak Virginia service, setting a record for fiscal year ridership. That total significantly beat the previous record of 894,065 set during fiscal year 2015. Amtrak Virginia service travels along four corridors from Washington, D.C. to Norfolk, Newport News, Roanoke, and Richmond.

What does this all mean for Virginians? It means our leaders, both Democratic and Republican, recognized the need for rail service to lighten the load on the state's highways and provide another alternative for travelers tired of sitting in traffic. It means Virginia directed funding to rail infrastructure to improve service by laying new tracks and building bridges. And it ultimately means that rail is a viable part of the transportation mix in the Commonwealth.





# MAJOR ACCOMPLISHMENTS OF 2023.

The U.S. Department of Transportation's Federal Railroad Administration (FRA) announcement to expand and improve passenger rail in America, President Biden is announcing 69 rail corridors in 44 states have been selected for future development through FRA's Corridor Identification and Development Program, a new program made possible by the President's Bipartisan Infrastructure Law. This inaugural round of selections will upgrade 15 existing rail routes, add or extend service on 47 new routes, and advance 7 new high-speed rail projects impacting every region of the country.



*"THE BIDEN-HARRIS ADMINISTRATION TAKES ANOTHER HISTORIC STEP TO DELIVER THE PASSENGER RAIL SYSTEM THAT AMERICANS HAVE BEEN CALLING FOR – WITH \$8.2 BILLION FOR FASTER, MORE RELIABLE, EXPANDED TRAIN SERVICE ACROSS THE COUNTRY," U.S. TRANSPORTATION SECRETARY PETE BUTTIGIEG SAID. "WITH THIS FUNDING, WE'LL DELIVER AMERICA'S FIRST HIGH-SPEED RAIL ON A ROUTE BETWEEN SOUTHERN CALIFORNIA AND LAS VEGAS, COMPLETE MAJOR UPGRADES FOR RIDERS IN VIRGINIA, NORTH CAROLINA, ILLINOIS, PENNSYLVANIA, MAINE, MONTANA, AND ALASKA, AND ANNOUNCE A COMPREHENSIVE PLAN THAT MAKES IT EASIER TO EXPAND PASSENGER RAIL LINES IN 44 STATES."*



# AMTRAK'S NEW AND ENHANCED SERVICES

## A RECAP

Contribution By: Mariah Morales

Investment in America's passenger rail network is critical to the economic and environmental well-being of our nation. As we look to the future, Amtrak is exploring new opportunities to better connect communities, reduce our carbon footprint, and provide economic benefits for every American. Amtrak service expansion will benefit all Americans, from rural main streets to urban city centers.



ABOVE: AMTRAK'S EASTBOUND EMPIRE BUILDER CROSSING OVER THE CUT BANK CREEK BRIDGE AS IT APPROACHES CUT BANK, MONTANA.

Alongside states, municipalities and other stakeholders, we are proud to support the Federal Railroad Administration (FRA) as they lead the development of new intercity passenger rail services through the Corridor Identification and Development Program (CIDP).

In the last two years, we've launched multiple routes that return regular passenger service to previously

served destinations. Two summers ago, we introduced seasonal service on the Berkshire Flyer, reconnecting New York City to the Berkshires for the first time in 51 years. We also extended our Ethan Allen Express service from Rutland, to Burlington, Vermont. Financed by the Vermont and New York State Departments of Transportation, the Ethan Allen Express now directly connects 15 communities, from Burlington to

New York City, which were not regularly served by rail since 1953. Our efforts mark a historic return to passenger rail in Vermont's most populous city. In collaboration with VIA Rail Canada, NYSDOT, and federal agencies, we also resumed the Adirondack service between New York City and Montreal, marking the first return of cross-border service with VIA Rail since 2020.



We've seen incredible growth on our state-supported routes, thanks to investment from our state partners. We're addressing increased state demand for rail travel, offering passengers greater economic and recreational opportunities across the country. In partnership with the Virginia Passenger Rail Authority, we've enhanced the Northeast Regional route by adding a second daily train through Roanoke and a third through Norfolk. Our Virginia services have rebounded to pre-pandemic levels and far exceeded them. We're now providing eight daily round trips from Washington through Virginia, connecting residents to D.C., Baltimore, Philadelphia, and New York. In North Carolina, with support from the North Carolina Department of Transportation, we introduced a fourth daily Piedmont service. In collaboration with the Washington and Oregon Departments of Transportation, we added a second daily Cascades round-trip service from Portland, Oregon, to Vancouver, Canada. This restores operations to pre-pandemic levels, and we're looking to expand our Cascades service even further, looking to reach six round trips daily by the end of 2023.

Looking further ahead, we are launching even more new services that will increase rail travel opportunities for passengers in underserved communities. We are set to resume passenger-rail service between New Orleans and Mobile, Alabama for the first time since 2005. This expansion, in collaboration with the Southern Rail Commission (SRC), is slated to start in 2024. Amtrak is working through final partnership agreements with governmental agencies and host railroads before route service begins. The Twin Cities-Milwaukee-Chicago Intercity

Passenger Rail Project (TCMC) will create a second daily round-trip on the 411-mile rail corridor between Chicago and Minneapolis-Saint Paul. In collaboration with the Minnesota, Wisconsin, and Illinois DOTs, the FRA, host railroads and other regional partners, service is expected to begin in 2024. This route is aligned with our Empire Builder route and offers increased choices and flexibility with morning and midday departures. We've submitted further FRA CIDP grant applications aiming to bring the Cardinal and Sunset Limited to daily service, and we are looking to further extend Northeast Regional service to Long Island.

Our journey to grow Amtrak service across the United States is just beginning. In the coming years, we hope

to better expand Amtrak service to America's fastest growing communities in partnership with states and the FRA. Our vision for growing service is not just about tracks and stations; it's a catalyst for economic growth. In FY23 we hired over 4,800 people and in FY24 we expect to hire another 4,300. As service continues to grow, we will continue to create new well-paying jobs at Amtrak and support workforce development across the entire American rail industry, invigorating local economies and communities. Join us in building a more connected, accessible, and prosperous future for the United States as we reshape rail travel as we know it.



ABOVE: AMTRAK'S EMPIRE BUILDER EMERGES INTO TUNNEL CITY, WISCONSIN FROM THE TUNNEL BUILT IN 1875.





# INDIA... FAST LANE

## INDIA'S JOURNEY TOWARD HSR EXCELLENCE AND LESSONS FROM GLOBAL PIONEERS

Contributed By: Lynn Feng and Maria Barquera, AECOM

INDIA IS A COUNTRY KNOWN FOR ITS DIVERSE LANDSCAPES, RICH CULTURE, AND BUSTLING CITIES. INDIA'S EXTENSIVE RAILWAY NETWORK STANDS AS A SYMBOL OF CONNECTIVITY AND PROGRESS. AMONG ALL THE EXPERIENCES YOU COULD GAIN IN INDIA, THE TRAIN EXPERIENCE IS ONE OF THE TOP-NOTCH ACTIVITIES. TODAY'S TECHNOLOGY HAS MANAGED TO ADD SOME ENTERTAINMENT AND COMFORT TO THIS MUNDANE TASK AND TURNED IT INTO A TOURISM ACTIVITY, AND SOME OF THE FASTEST TRAINS IN INDIA CAN TRAVEL AT SPEEDS OF UP TO 160 KM (100 MPH) PER HOUR MAKING THEM A GREAT WAY TO COVER LONG DISTANCES QUICKLY AND COMFORTABLY.

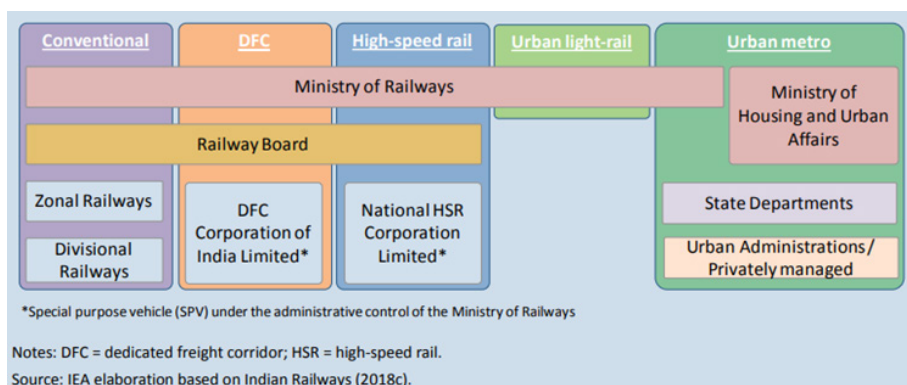
India currently owns the world's fourth-largest railway network, trailing the United States, China, and Russia, with an extensive network of 67,368 kilometers (41,860 miles) of rail tracks. It also has the second-highest volume of passenger traffic globally. Since 2000, India has witnessed a 200 percent surge in rail passenger traffic and a 150 percent increase in freight traffic. Despite these impressive figures, the rail mode share within the overall transportation sector has shrunk, primarily due to significant investments in and development of road infrastructure. Presently, approximately half of India's railway system is electrified. The country is ambitiously working towards achieving 100 percent electrification by 2024, coupled with a broader goal of decarbonizing its railway system. This initiative aligns with India's commitment to sustainable and environmentally friendly transportation.

The Ministry of Railways, a central government body, is the owning and operating entity of India's rail transport, which includes Indian Railways, the principal rail operator in the country that handles an extensive array of passenger and freight services. This centralized management structure plays a crucial role in the strategic development and modernization of the railway network, as highlighted in the diagram below.

Figure 1. Structure of Governance for Rail Transport in India

### 1. OVERVIEW AND HISTORY OF HSR DISCUSSIONS IN INDIA

After India gained independence from Britain, a significant effort in the 1950s was made to consolidate the country's rail system. However, the evolution of a modern rail system, particularly high-speed rail (HSR), has been







overshadowed by substantial investments in road infrastructure expansion, which have outpaced rail developments. This discrepancy has led to capacity constraints in densely populated routes and cities, with the lack of HSR and the affordability of air travel swaying public preference towards alternative transportation modes. Historical policy and investment decisions favoring road networks have contributed to the delayed advancement of HSR in India.

Discussions about HSR in India date back to historical proposals like the Delhi-Kanpur HSR line in 1980, which was ultimately shelved due to financial feasibility concerns, leading to reliance on trains with speeds up to 140 km/hr (87 mph). The “Vision 2020” plan introduced in 2009 by the railway minister aimed to establish six HSR corridors to boost national integration and create job opportunities. While it’s challenging to isolate a single reason for the non-realization of these plans, high costs and other priorities such as safety, as noted by a Railway Board official, played significant roles.

A pivotal moment came in 2016 with the establishment of the National High-Speed Rail Corporation Limited (NHSRCL), replacing the former High-Speed Rail Corporation of India. This move signaled a renewed commitment to HSR, reflecting its elevated priority. NHSRCL’s mandate includes financing, constructing, and operating HSR corridors. Through prioritizing HSR development, India seeks to meet the growing demand for passenger travel, alleviate infrastructure capacity constraints, and provide a competitive alternative to road, bus, or air travel for long distances.

## 2. EVOLVEMENT OF THE MUMBAI-AHMEDABAD HIGH-SPEED RAIL PROJECT

The Mumbai-Ahmedabad High-Speed Rail Project (MAHSR), inaugurated in 2015 through an India-Japan agreement, aims to connect Mumbai, Maharashtra’s capital and India’s second-largest city, with Ahmedabad, a burgeoning commercial hub in Gujarat. Initial plans included a Pune segment, but this was dropped due to high construction costs. The corridor’s selection was influenced by factors like projected high passenger numbers (estimated at 40,000 in the first year), per capita GDP, population density, corridor length, and economic growth prospects in the area.

Upon completion, the MAHSR will feature Japanese-designed Shinkansen trains traveling at speeds up to 320 km/hr (199 mph) across a 508 km stretch. The line will include 12 stations and accommodate up to 750 passengers per train. With 35 daily services, running every 20 minutes during peak hours and every 30 minutes off-peak, the rail will significantly reduce travel times — from 9 hours by bus and 6 hours by conventional rail to just 2 hours.

The total cost of the project has changed with time, however, the most recent total projected cost is at 17 billion USD. Under the original agreement, the Japan International Cooperation Agency (JICA) was to provide 80 percent of the funding for the original project cost through a low interest (0.1 percent) Official Development Assistance (ODA) loan repayable over 50 years, with an initial moratorium of 15 years. The remainder of the cost is burdened by the Indian



government through the Indian Ministry of railways and the states of Gujarat and Maharashtra, the states of the train's origin and destination. The original loan amount was up to 100 billion yen, with subsequent loans in 2018 of 150 billion yen and 2022 of 100 billion yen, total funding from Japan comes to 350 billion yen or 2.3 billion USD. Also under the agreement, JICA will have and will continue to provide technical assistance including feasibility studies, basic and detailed designs, trainings in Japan, station area development technical cooperation projects, and dispatch of Japanese Shinkansen experts to the NHRCL, which is the Indian government agency in charge of executing the project. In 2020, NHRCL awarded a civil work (C4) package to Larsen & Toubro (L&T), an Indian EPC firm, for the design and construction of nearly half of the rail line, which will include 237km, 4 stations, a train depot, and one mountain tunnel. L&T's Transportation Infrastructure (TI) sector will be building the C6 package, including viaducts, one station, major river bridges, and maintenance depots. Overall, the project was divided into 28 contract packages, including 11 civil packages.

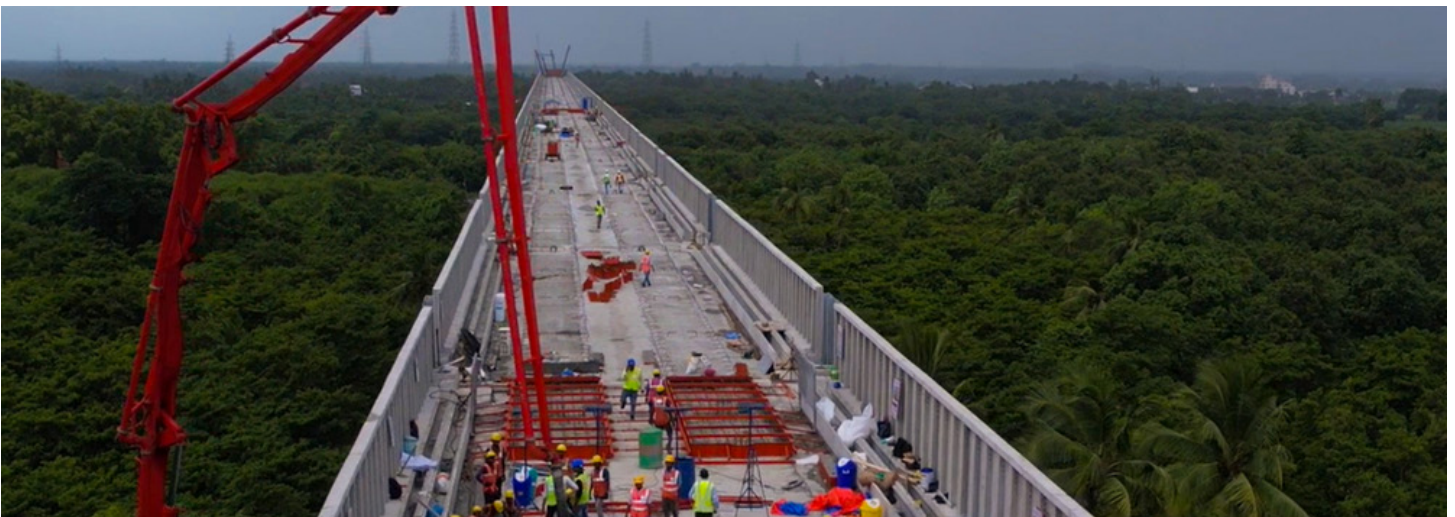
The initial target for completing the project was set for 2023; however, due to various challenges, this timeline has been extended, with the current projection estimating completion between 2026 and 2028. The major issues contributing to this delay are outlined as follows:

- **Land Acquisition Challenges:** The route's planning encountered obstacles, including disputes over its passage and impact on agricultural land, resulting in considerable delays in acquiring the necessary land. A total of 1,887 households needed relocation, complicating the process further. As of now, 1381.9 hectares out of the required 1389.5 hectares have been acquired, which could lead to adjustments in the project scope and cost.
- **Environmental Concerns:** The project faces environmental issues such as potential deforestation, threats to

ecologically sensitive coastal zones, and disruptions to wildlife migration patterns.

- **Increased Costs:** To minimize disruption to existing infrastructure, the decision to construct elevated viaducts for the new tracks added approximately 1.3 billion USD to the project's cost. While Japan has covered significant parts of the project's financial needs, the delays have inflated the remaining costs. India might bear these additional expenses if further funding from Japan is not secured.
- **Political and Financial Misalignment:** High construction costs and limited political prioritization initially hampered support for the project. However, Japan's financial backing and international cooperation have been crucial in maintaining its viability and garnering political backing.
- **Geopolitical Factors:** The project's progress has been influenced by geopolitical dynamics. Notably, potential assistance from China has been stalled due to external factors, including border conflicts, affecting collaboration between the two nations.

The significance of the Mumbai-Ahmedabad High-Speed Rail Project (MASHR) has been reinforced under the G7 Partnership for Global Infrastructure and Investment (PGII). This initiative seeks to bridge infrastructure investment gaps in partner countries, targeting the mobilization of 600 billion USD by 2027. MASHR features prominently in Japan's "Enhancing Resilience of Supply Chain and Connectivity in Transport and Digital" initiative, highlighting a global collaborative effort to promote sustainable economic growth through more efficient people and goods movement. The project's construction and operation are expected to create substantial employment opportunities, including 4,000 direct jobs, 20,000



Above: Work is well underway on India's first high-speed rail system — one that it hopes will eventually connect all of India's major cities. Image courtesy of National High Speed Rail Corporation Limited (NHRCL).



Table 1. Operational Growth Plan for MAHSR

Metric	1 <sup>st</sup> Year Operation	10 <sup>th</sup> Year Operation	20 <sup>th</sup> Year Operation	30 <sup>th</sup> Year Operation
Number of Train (per day/one direction)	35	51	64	105
Train Capacity	750	750-1250	1250	1250
No of trains (per day/one direction) Peak hour	3	4	6	8
No of trains (per day/one direction) Off-Peak	2	3	3	6

construction jobs, and 20,000 indirect jobs. The benefits and challenges of this project are summarized as follows:

Benefits:

- **Economic Growth:** Enhanced connectivity and accessibility will spur economic development, leading to job creation, new business opportunities, and income growth.
- **Time Efficiency:** Travel time will be drastically reduced from 9 hours by bus and 6 hours by conventional rail to just 2 hours.
- **Infrastructure Development:** The project could act as a catalyst, boosting public and political support for future HSR projects.
- **International Cooperation:** The project exemplifies increased international collaboration, particularly under initiatives like the PGII.

Challenges:

- **Cost Concerns:** The primary challenge for HSR adoption has been cost-related, as evidenced by historical financial infeasibility and escalating construction costs.
- This overview highlights the MASHR's potential to transform regional connectivity and its role as a key element in broader international infrastructure development efforts. The future plans for MAHSR project are primarily centered on incrementally increasing the frequency of train services. The envisioned growth over the next three decades is outlined above in Table 1 :

In addition to the MAHSR, 12 total High-Speed Rail (HSR) projects have been proposed, with MAHSR being the first to be implemented. While the primary focus currently is

on completing the MAHSR, progress has been made on other projects as well. Detailed Project Reports (DPR) have been completed for 7 of these proposed projects, and the remaining 4 are still in the proposal stage under the National Rail Plan. This comprehensive plan underscores India's commitment to expanding its HSR network, enhancing connectivity and modernizing its rail infrastructure. ,

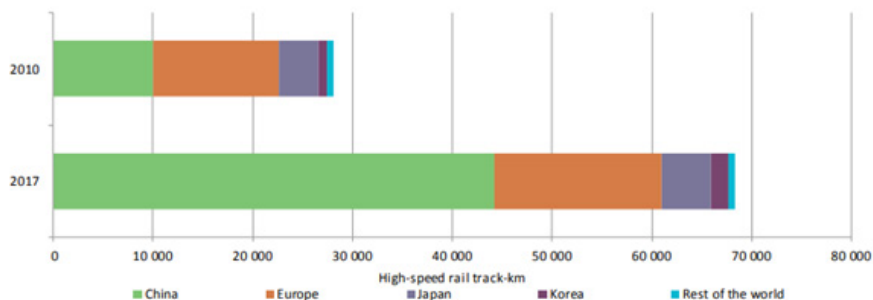
### 3. International Best Practice Case Studies and Lessons for India

On an international comparison, India accounts for 39 percent of global passenger movements on conventional rail, followed by 27 percent in China, 11 percent in Japan, and 9 percent in the EU. When comparing the length covered by HSR tracks, however, China has by far surpassed other countries, with 33,000km covered and 11,000km under construction. Comparatively, Europe has 17,000km in operation and 7,000km planned, while Japan has 3,000km in operation and 3,000km planned. The image below illustrates a 2010 and 2017 comparison of HSR development by leading regions. Finally, pushes towards electrification has largely been led by China, India, and Korea.

Figure 2, below.

#### CASE STUDY: CHINA

China, accounting for nearly two-thirds of global High-Speed Rail (HSR) activity, commenced its HSR construction in 2007. The Mid-to-Long-Term Railway Development Plan (MLTRP) of 2008 significantly boosted this growth, aiming to interconnect major



Note: High-speed rail lines are assumed to be bi-directional, i.e. consist of two tracks per line.

Source: IEA analysis based on (UIC, 2018b). (This source also includes tracks with maximum speeds under 250 kilometres per hour, though those are not included in this analysis.)



Country/Region	KM HSR in operation (2020)	Km HSR planes (2020)	Earliest construction	Top Average Speed
China	33,000	11,000	2007	350 km/hr (217 mph)
EU	17,000	7,000	1981	300 -350 km/hr (186-217 mph)
Japan	3,000	3,000	1964	320 km/hr (199mph)
Korea	1,000	3,000	2004	300 -350 km/hr (186-217 mph)

cities and provincial capitals. The MLTRP has since expanded to 29 out of 34 provincial regions, playing a key role in economic development. The World Bank has played a significant role in this development, having invested 19 billion in 110 total transportation projects and provided funding for 2,600km of HSR lines. The Transport Transformation and Innovation Knowledge Platform (TansFORM) program was developed jointly between the World bank and China's Ministry of Transport, which is a platform used to share Chinese and international experiences to develop knowledge sharing.

China and India share similarities that favor HSR development: large geographical size, high population density, and numerous populous cities. China's HSR, with about half of its passengers traveling for business, has boosted labor mobility, tourism, and network expansion, efficiently matching supply and demand. The MLTRP, with its initial launch in 2004 and revisions in 2008 and 2016, envisions HSR networks stretching 38,000 km by 2025 and 45,000 km by 2030. One challenge India faces is the relatively low cost of alternative long-distance travel options; however, China's competitive HSR fare pricing has been a successful strategy.

#### CASE STUDY: EU

The EU pioneered the first international rail network, transitioning from conventional to HSR. France, in 1981, was the first EU nation to adopt HSR, with lines now extending over 2,800 km. Germany followed in 1991, and the Eurostar began operations in 1994. Most European HSR systems are built to French standards.

Railteam was founded in 2007 as a consortium of European railway operators with the goal of coordinating cross border HSR travel. Further, cross-border collaboration is incredibly important in the EU, particularly through various EU Directives that work towards interoperability between the various corridors in the Trans-European Transport Network (TEN-T). For each of the corridors in TEN-T, a European Coordinator was appointed to oversee the progress of the corridor and to act as an ambassador of TEN-T.

Although the EU and India operate on different levels (regional vs, country), given the sheer size and density of India, similar governance practices could be taken up

to facilitate more rapid adoption of HSR. First is the strategic use of cross-boarder collaboration through entities like Railteam. It is evident that India is open to such activities, as much of the funding and necessary education for MAHSR is provided by Japan, and such practices may be continued on a similar scope. Additionally, while EU operates on the regional level, given the size and population density of India, similar appointments of Ambassadors could be emphasized to advocate on behalf of proposed HSR lines, as it seems as though much of the political and financial focus has been on the completion of MAHSR.

#### CASE STUDY: JAPAN

Japan, a trailblazer in HSR, launched its Shinkansen or bullet train in 1964. With nine lines covering 22 cities, the Shinkansen transports nearly 420,000 passengers daily. Though Japan is limited in land capacity, its rapid development of HSR is impressive, and even more impressive considering that no casualties have occurred since HSR's beginning operations over 50 years ago. Much of this can be attributed to quality development of technology and strong efforts for employee and rider safety across the entire system including operations and maintenance. Additionally, reliability is a key factor in the Shinkansen system, utilizing control systems and skilled operators that allow trains to run on schedule on 3-minute intervals.

A large part in success in Japan's HSR system can be attributed to the ease of access it offers riders, as the system is integrated seamlessly with other modes of transportation such as conventional passenger rail and buses. Additionally, supporting infrastructure such as strategic location of stations and high density within those areas help to further facilitate user experience and economic development. Because Japan is largely helping India with the development of MAHSR similar practices can be applied, especially when considering the strategic locations for stations and which locations could optimize economic activity and ensure high usage rates by riders.

#### CASE STUDY: KOREA

Korea has experienced the most rapid shift from conventional to HSR, and in 2016, HSR accounted for around



two-thirds of all passenger rail travel. Development officially started in 2004 with the Korean Train eXpress (KTX), which are operated by the Korea Railroad Corporation (Korail), while the Korean High Speed Rail Construction Authority (KHSRCA) was formed in 1992 specifically for the construction of HSR. One key success of Korea's rapid development was the Phased Network Approach, which worked to implement HSR simultaneously with the electrification and upgrading of existing tracks. Further, KTX trains are able to share tracks with conventional passenger rail tracks, allowing for increased flexibility. India has similar initiatives to modernize existing train lines, which can help build a more efficient and safe operations. Integration of HSR and conventional rail is also a particular success that India can implement.

#### 4. Lessons Learned from Successful HSR Implementation

The adoption of HSR is a significant infrastructural and economic undertaking, with typical costs ranging from 20-80 million USD per line-kilometer. This necessitates high passenger or freight throughput to offset the considerable construction expenses. Drawing lessons from successful HSR projects worldwide, several factors emerge as crucial for India's HSR adoption:

- **High Population Density:** Regions with high population density can efficiently transport a large number of passengers. China's approach of developing HSR first in densely populated capital cities and provincial capitals, where long-distance travel demand was high, offers a pertinent model.
- **Constraints on Alternative Transport:** HSR becomes more attractive in contexts like India, where existing transport modes such as highways or conventional rail

are constrained. However, with relatively low air travel costs in India, HSR fares must be competitive. Japan's experience, where airfares are lower than HSR but balanced through factors like the privatization of Japan Railways and focusing on efficient lines, provides valuable insights. Although privatization may not be feasible for India, its collaboration with Japan could yield best practices in operational efficiency.

- **Market Analysis and Travel Pattern Assessment:** Understanding passenger origins and destinations is crucial for analyzing travel patterns and demand. Additionally, evaluating existing infrastructure, such as HSR's interoperability with conventional rail, is vital, as exemplified by Korea's HSR integration.

- **Zoning and Infrastructure Development for Transit-Oriented Development:** Policies encouraging mixed-use development create dynamic urban centers, reducing vehicle dependence and boosting the appeal for residents and tourists alike.

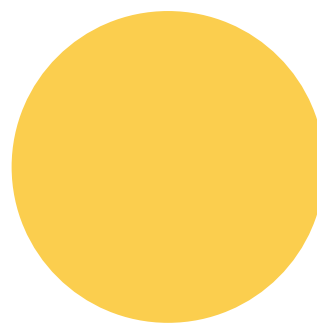
- **Comprehensive Planning:** A holistic approach, as demonstrated by China's medium and long-term rail plans, should encompass safety, stakeholder coordination, current and future constraints, and interoperability, while seeking ways to mitigate high construction costs.

Combining these factors with operational strategies like minimizing service costs, maximizing revenues, and competitive pricing compared to other transportation modes, HSR can significantly contribute to the environmental, economic, and social objectives of a country or region. India, leveraging these global lessons, can strategically position its HSR projects for success and sustainability.





# IN THE SPOTLIGHT



YOU SHOULD GET TO KNOW US



**ANDY BYFORD**

*Senior Vice President, High-Speed Rail Programs*

"I passionately believe that the time has come for true high-speed rail service in the US. Once riders have experienced the convenience, comfort and time savings of state-of-the-art downtown to downtown service, they will clamor for other city pairs to join the club."

AMTRAK



**MEREDITH SLESINGER**

*Rail & Transit Administrator*

"Developing and launching new rail services such as the Berkshire Flyer and the Inland Route is one of the most rewarding aspects of my job at MassDOT. Bringing together disparate stakeholders such as CSX, Amtrak, and our other state partners to launch service is challenging given the operational and infrastructure constraints and varying priorities. While there is much work to be done, being part of the solution to address climate change, provide more mobility options, and connect communities is incredibly motivating."

MASSACHUSETTS  
DEPARTMENT OF  
TRANSPORTATION



**DJ STADTLER**

*Executive Director*

"In Virginia we are looking for innovative ways to expand passenger rail throughout the state. With limited capacity on current routes, we worked with our freight partners to purchase miles of right-of-way, which will allow us to increase service along current routes and expand service to new communities. With this additional capacity, we're able to provide Virginians with passenger rail that reliably gets them where they want to go when they want to get there."

VIRGINIA  
PASSENGER RAIL  
AUTHORITY



# TIMELY SERVICE

## GETTING TO THE BOTTOM OF CHRONICALLY LATE TRAINS

Contribution By: Jim Mathews - President & CEO, Rail Passengers Association

The American rail traveler's 45-year-old, but rarely vindicated, right to be on time is once again the subject of what looks to be yet another epic, costly, and prolonged legal battle between Amtrak and its freight-rail host railroads.

The first time around, it took nearly two decades – and even a couple of trips to the Supreme Court – to get regulations put on the books in late 2020 spelling out a customer-focused on-time performance (OTP) standard. Today we're a little less than a year into another proceeding, this time before the Surface Transportation Board, where Amtrak blames Union Pacific for the Sunset Limited's horrible delays and is asking STB for relief under those new rules.

The Board's investigation schedule suggests we shouldn't expect any kind of finding until at least the first quarter of next year, and a second phase to assess damages might not be finished until close to the end of 2024. Plus, regardless of the outcome, UP says it plans to challenge STB's authority to award damages in connection with metrics and standards investigations anyway, claiming the PRIA

law's language granting STB that authority is unconstitutionally vague. That threat is less empty than it might have once been, given that this term the Supreme Court is taking up a case from some commercial fishermen that could wind up gutting Federal agencies' abilities to act in many areas of everyday life.

What does all of this mean? It means two long-festering controversies will effectively be on trial in this deceptively high-stakes proceeding. First, who and what are really to blame for chronic lateness and second, whether extra-long trains can ever be made to work for shippers and passengers as well they do for freight railroads' accountants and investors.

Fortified by the strong new customer-service rules, Amtrak's December 2022 complaint fingered dispatching practices and the reliance on extra-long freight trains driven by precision-scheduled railroading, or PSR. The freight railroads are fighting back like cornered honey badgers. And it's no wonder. A look at the initial round of questions STB has posed to all the big players in

this dispute suggests that they'll be looking at a lot more than just a disputed schedule, digging deeply into excuses and rationales shippers and the traveling public have endured for years without real validation.

Answers to initial questions the Board posed to all parties are already yielding interesting insights.

For Union Pacific, the STB was zeroed in on the availability of passing sidings for UP's sometimes-three-mile-long trains. Answering one of many STB's written questions posed over the summer, UP acknowledged in a filing to the docket last month that between October 2021 and last December, it had no passing sidings long enough to accommodate all trains travelling past them. Asked about how many trains that might affect, UP calculated that since the new Customer OTP metrics and standards took effect, 27,059 freight trains could not fit into all the passing sidings that the train travelled past.

UP said it was "difficult or impossible" to answer STB's request to list each instance where passing siding length resulted in an Amtrak train being stopped or slowed, contending that it's never about siding length alone but instead "a confluence of factors,





including the interacting trains' deviations from planned schedules prior to the stoppage or slowing at issue."

UP also continues to dispute Amtrak's "schedule skeleton" times, arguing that there is not enough recovery time at many stations, and that there should be more time built in for Amtrak crew changes in Beaumont and Alpine, Tex., and in Maricopa, Ariz. because finicky positive train control (PTC) initialization can often drive extra-long crew change times.

The Board also asked dozens of pointed questions of Amtrak, mostly around how much reserve equipment they had available, how good Amtrak is at assigning delay causes in its recordkeeping, and the degree to which Amtrak's own equipment might contribute to delays.

If an Amtrak table filed to the STB docket is correct, the answer to equipment-caused delays is "not much." Amtrak created Excel tables to answer many of the Board's questions, including a particularly impressive table detailing – by date, train number, and milepost – every delay to a Sunset Limited train. The table showed that every day trains running on the Sunset


route experience an average of 52 delays, including 36 host-responsible delay events, the vast majority of which (more than 99 percent) are undisputed. That works out to 15,576 host-responsible delays of all kinds during the 434 days covered in Amtrak's STB complaint. And only 2.65 percent of delay minutes can be traced to Amtrak equipment problems.

STB is putting the accuracy of Amtrak's internal recordkeeping under the microscope, probing deeply into how Amtrak counts late minutes and assigns blame. But perhaps even more far-reaching are STB's raft of questions to UP about sidings, siding lengths, and management decision-making. This gets at the very heart of the freight railroads' reliance on extra-long trains without enough sidings to handle them as a core feature of their modern business model. Reliance on extra-long trains often makes it physically impossible for the freight carriers to comply with

the nearly 50-year-old law compelling those railroads' freight trains to make way for Amtrak.

Despite pleas for a speedy proceeding – from Amtrak, the U.S. Dept. of Transportation, the Federal Railroad Administration, and my own Rail Passengers Association – it looks as if STB is gearing up for an investigation that will look far beyond Union Pacific's simple violation of the standards. Instead, a wide-ranging probe would seem to be on offer, whose scope will demand significant time and care. Though time-consuming, it will develop a robust evidentiary record, answering the crucial question of not just whether Union Pacific is chronically delaying those passengers, but how and why.

And as one of those who has clamored loudly for rapid intervention in this dispute, I will be the first to admit that even though I wish this wasn't going to drag on so long, I'm encouraged by the depth and detail of STB's questions to all sides. It seems that after nearly two decades of finger-pointing and he-said-she-said, a neutral body with legal authority finally is going to get to the bottom of at least some of the most persistent questions surrounding late trains and the freights' responsibilities to honor passengers' legal right to be on time. On balance, this will be a good thing.

DELAYS:			
			
WEATHER	SCHEDULED TRACK MAINTENANCE	MECHANICAL PROBLEMS	OBSTRUCTIONS





**Washington State  
Department of Transportation**

# WSDOT CASCADIA HSR & I-5 PROGRAM

HIGH-SPEED RAIL & WASHINGTON STATE'S INTEGRATED PLANNING APPROACH

Contribution By: Jason Beloso

The Washington State Department of Transportation (WSDOT) is collaborating with the state of Oregon, the province of British Columbia, the private sector, and other regional partners to explore how a high-speed, high-capacity corridor can better connect the Cascadia megaregion – including metropolitan Portland, the greater Seattle area, and metropolitan Vancouver, British Columbia. The Cascadia megaregion has experienced significant growth in recent years and 3-4 million more people are expected by 2050—a more than 30percent increase. Planning for this growth will require substantial, region-wide investments in all transportation modes. Seeing the opportunity to advance high-speed rail with an integrated, multi-modal approach, in 2023, WSDOT integrated high-speed rail and I-5 corridor planning into one program.

The Cascadia High-Speed Rail and I-5 Program will look holistically at highway, rail, and other travel options, including close coordination with air mobility and Amtrak Cascades systems along the I-5 corridor. WSDOT believes this integrated approach to multi-modal system planning will foster long-term success, the strategic use of resources and a comprehensive

understanding of area communities, their needs, and opportunities in the region. Through the Cascadia High-Speed Rail and I-5 Program, WSDOT is looking to create a multimodal transportation system for western Washington that would help shape and strengthen regional transportation systems, connect communities, support jobs and the economy, improve access to housing, and help decrease greenhouse gas emissions. This innovative approach has been recognized nationally. The American Association for State Highway and Transportation Officials (AASHTO) and the Transportation Research Board's National Cooperative Highway Research Program (NCHRP) selected the Cascadia Program to participate as an initial deployment in the "moonshots" to transform transportation by 2030. The partnership between Washington, Oregon, and British Columbia to advance a Cascadia High-Speed Rail corridor goes back to 2016 when the first study effort began. In 2021, the governors of Oregon and Washington and the premier of British Columbia signed a Memorandum of Understanding (MOU) confirming their continued commitment to advance activities in support of Cascadia High-Speed

Rail. In 2023, WSDOT, in partnership with Oregon and British Columbia, submitted two U.S. federal grant applications to support project planning work over the next 2-5 years, including a robust evaluation of project concepts informed by thorough engagement with communities and partners. Cascadia High-Speed Rail planning is at an early stage, and route and station locations have not yet been identified. Previous studies have focused on the potential for a Cascadia High-Speed Rail corridor. These early studies have shown that Cascadia High-Speed Rail has the potential to attract increased investment from employers in the region and create as many as 38,000 construction jobs, 3,000 operating and maintenance jobs, and 160,000 permanent new jobs across the wider economy. Cascadia High-Speed Rail would increase the transportation network capacity without adding a burden on existing freight rail tracks. Projects like the Cascadia High-Speed Rail system are designed to serve future generations and require a long-term, integrated planning approach. That type of forward thinking is what's needed to gain the long-term economic benefits, create multi-modal travel options and dramatically cut greenhouse gas emissions.





# HIRING AND WORKFORCE DEVELOPMENT

Contribution By: Mariah Morales

As Amtrak plans to double ridership by 2040, while making major improvements to our fleet, stations, and infrastructure, we have exponentially expanded our workforce to support America's rising demand for passenger rail. \$66 billion have been authorized for rail infrastructure projects, service expansion, and capital delivery through the Infrastructure Investment and Jobs Act (IIJA). This gives passenger and freight rail the resources that are needed to build their workforces and move towards a more connected America. Our workforce will help us deliver major capital projects to modernize our fleet, stations, and infrastructure, bringing more trains to more people.

This rapid surge in hiring is the result of many new initiatives from our Talent Acquisition team. These include incentives, walk-in hiring events, and innovative marketing efforts. In January 2022, Amtrak launched an employee referral program, which offers bonuses to all Amtrak staff that refer new employees. This program accounted for 37 percent of new hires in FY23. In FY23-24 Amtrak hosted 24 in-person events including an Amtrak

National Hiring Day with concurrent events in Washington, DC and Philadelphia. Lastly, we have expanded recruitment marketing through paid social media advertising, internet advertisements, radio advertisements, and in-station digital signage. These efforts have led to a growth in new hires, making 2023 the most successful hiring year in our history. This year we onboarded 4,800 new employees, reaching 8,500 employees in the past two years.

Amtrak hiring goes beyond the numbers. We are building an inclusive and diverse workforce by establishing diverse interview panels and requiring an "Introduction to Bias eLearning" for interview panelists. Amtrak is continuing to develop partnerships with diverse organizations such as the National Society of Black Engineers and the Association of Latino Professionals for America.

We also harness the talent of students and young professionals through recruitment and training programs and community partnerships. These include the internship and university programs which

now includes 32 universities, trade schools, and community colleges. Another project is the Mechanical Apprenticeship program which prepares apprentices for rail car repair training. Additionally, the Amtrak Rotational Program gives recent graduates and early career individuals the opportunity to experience different roles within the company, in both operational and management departments. We also partner with the US Chamber of Congress in their "Hiring our Heroes" program which connects the military community with American businesses. Our Talent Acquisition team appreciates the input of these valuable members of the workforce and looks forward to supporting their career development.

Looking ahead, our hiring efforts are just beginning. As we're doubling our ridership and upgrading our infrastructure, we will break even more records in the coming years by expanding these programs. Amtrak looks forward to continuing these initiatives in the future and prides itself on the service, dedication, creativity, and leadership of its workforce.



# TRANSFORMING TEXAS

## HOUSTON-TO-DALLAS HSR PROJECT AWARDED FEDERAL GRANT

Contribution By: Wendy Wenner, Urban Engineers

The approximately 240-mile high-speed rail line will offer a total travel time of less than 90 minutes, with convenient departures every 30 minutes during peak periods each day, and every hour during off-peak periods – with 6 hours reserved each night for system maintenance and inspection. The Texas High-Speed Train is good for Texas, providing a safe, affordable and productive transportation choice that advances the State's economy and prepares us for future growth.

The United States has long been behind other countries when it comes to high-speed rail initiatives. However, in recent years, there has been a renewed interest in developing high-speed rail systems as a way to alleviate traffic congestion, provide more sustainable transportation options, and create new jobs. One of the most significant developments in this area has been the announcement of a \$500,000 federal grant awarded to Amtrak to further study and develop a proposed high-speed railway between Houston and Dallas. This long-envisioned initiative had previously appeared to have been shelved but has been rejuvenated with the help of this funding. This high-speed railway project, which aims to utilize the Shinkansen bullet train technology from Japan and the former Northwest Mall site as the Houston terminal, is part of a larger initiative by the Federal Railroad Administration. This initiative, known as the Corridor Identification and Development Program (Corridor ID), was established using resources allocated through the Bipartisan Infrastructure Law passed by Congress in 2021. In total, 69 rail projects across varying stages of development were selected to receive a total of

\$8.2 billion in grant funding. The Houston-to-Dallas bullet train project is one of seven high-speed rail projects across the country that were awarded grant funding as part of this Program.

The current project plan between Houston and Dallas aims to transport passengers between the state's two largest cities in about 90 minutes. This would greatly reduce travel time compared to traditional rail or highway travel between the two cities. In addition to the grant funding, Amtrak has announced a partnership with Texas Central, the Dallas-based company that initially conceived the idea of building the 240-mile railway. This collaboration is an important step in bringing the project to fruition and demonstrates the commitment of both public and private entities to advancing high-speed rail in the United States.

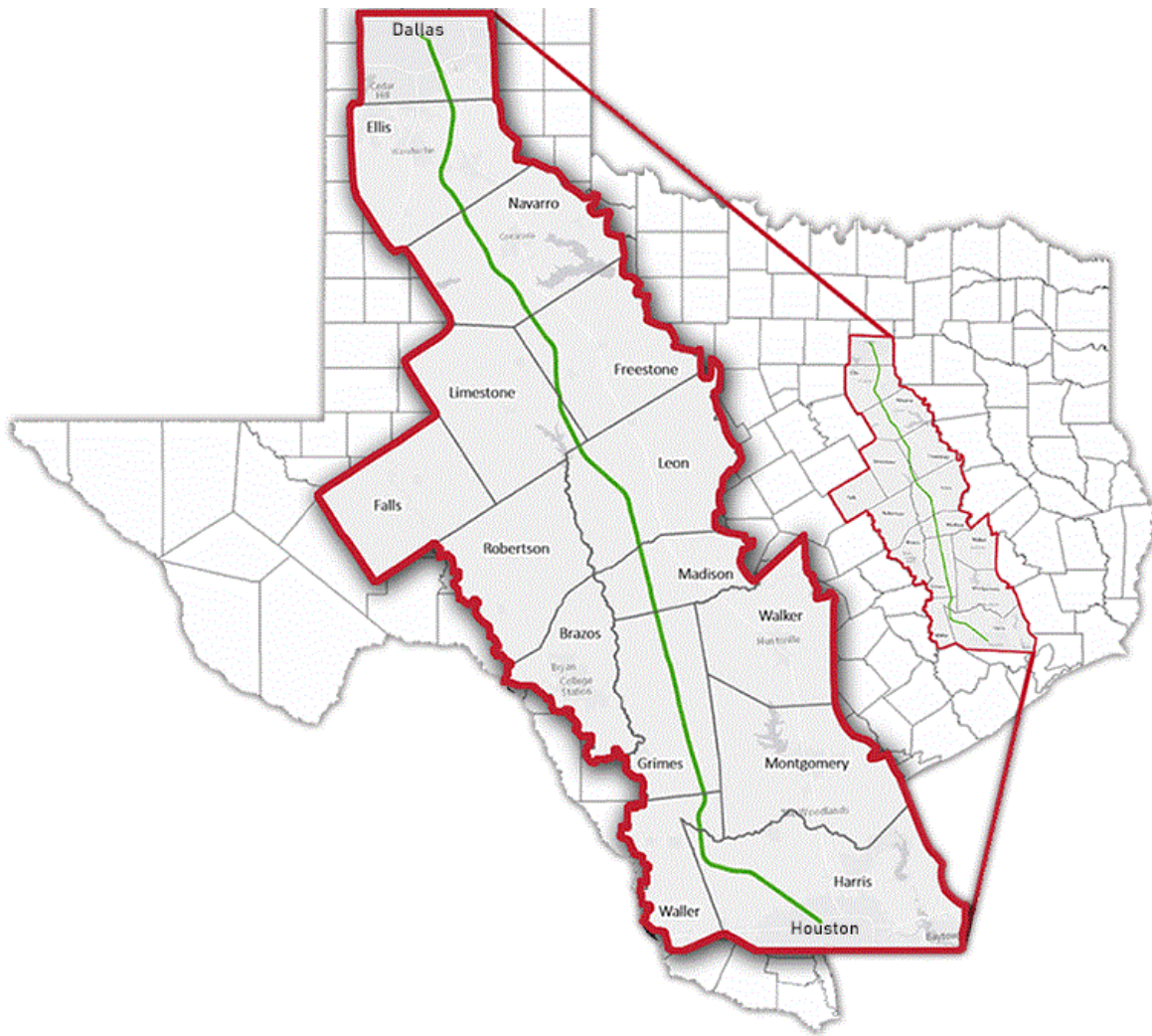
Despite these anticipated

developments, there are still significant challenges to overcome for the Houston-to-Dallas bullet train project. Land acquisitions along the proposed railway have reportedly slowed, and there has been pushback from rural landowners along the route. This opposition has presented obstacles to the project's progress. This contention is grounded in concerns about potential disruptions to local communities. However, a Texas Supreme Court ruling last June gave Texas Central the legal authority to acquire land through eminent domain, offering a glimmer of hope to supporters. It is essential to address these concerns and work collaboratively with affected stakeholders to ensure that the project respects the rights and interests of all parties involved.

There are also financial and logistical challenges associated with the construction and operation of a high-speed rail system. While the grant funding is a crucial step in advancing







the project, it is essential to carefully consider the costs and benefits of such a large-scale infrastructure initiative. It is clear that there are multiple perspectives on the potential impact of this high-speed rail project, and it is critical to explore both the positive and negative aspects of this initiative. One of the most significant and optimistic aspects of the high-speed rail project between Houston and Dallas is the potential to create thousands of jobs and benefit the environment. If the high-speed train materializes, it is expected to remove 12,500 cars per day from Interstate 45 and reduce greenhouse gas emissions by more than 100,000 tons per year, according to Amtrak and Texas Central. This would represent a major step forward in creating more sustainable transportation options and reducing the environmental impact of travel between the two cities. Additionally, the

creation of thousands of jobs would provide a significant economic boost to the region and create new prospects for workers in the transportation and construction industries. The implementation of a high-speed rail system between Houston and Dallas would provide a convenient, climate-friendly alternative to congested roads and airports. It would offer travelers a time-efficient and comfortable means of transportation, reducing the overall strain on the existing infrastructure and improving the quality of life for residents in both cities. The development of high-speed rail has the potential to transform the way people in Texas and the United States travel. From a broader perspective, the development of high-speed rail

in the United States represents growth to modernize transportation infrastructure, reduce congestion, and promote sustainability. It also presents a chance to create new jobs and stimulate economic growth. However, it is crucial to approach these initiatives thoughtfully and consider the diverse perspectives and potential impacts of high-speed rail projects. By doing so, it is possible to develop sustainable, inclusive, and community-focused transportation solutions that benefit all stakeholders. As the Houston-to-Dallas project continues to evolve, it is important to engage in open dialogue and collaboration to address concerns and work towards a shared vision of the future of transportation in the United States.



# BULLET TRAINS, GREEN GAINS

## HARNESSING HIGH-SPEED RAIL'S POTENTIAL

Contribution By: Karen Philbrick, MTI

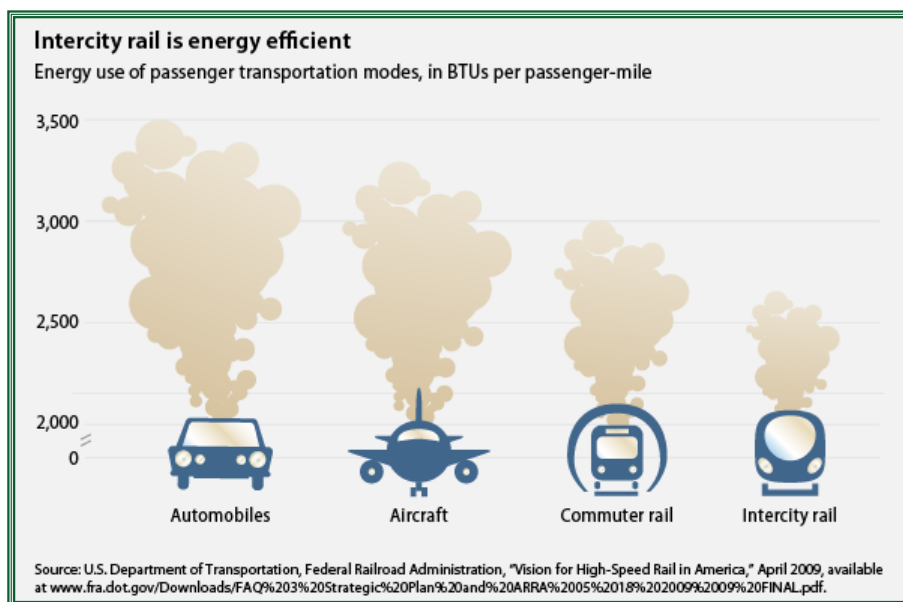
In the race towards a more sustainable and economically robust future, high-speed rail (HSR) emerges as the solution. Positioned precisely at the intersection of environmental responsibility and economic vitality, HSR has the potential to significantly reduce greenhouse gas (GHG) emissions, launch a new branch of economic and job output, spur domestic manufacturing, and more—all while connecting megaregions and uniting areas of the country through speedy, sustainable travel.

High-speed rail, an advanced passenger rail system that operates at speeds greater than 150 miles per hour (mph), originated in Japan with the introduction of the Shinkansen, or “bullet train,” in 1964. Since then, HSR has expanded globally, transforming transportation by offering a safe, high-speed, sustainable alternative to traditional modes of travel.

In the U.S., Acela is presently capable of operating at such speeds (but only for approximately 50 miles of track) and most recently Brightline

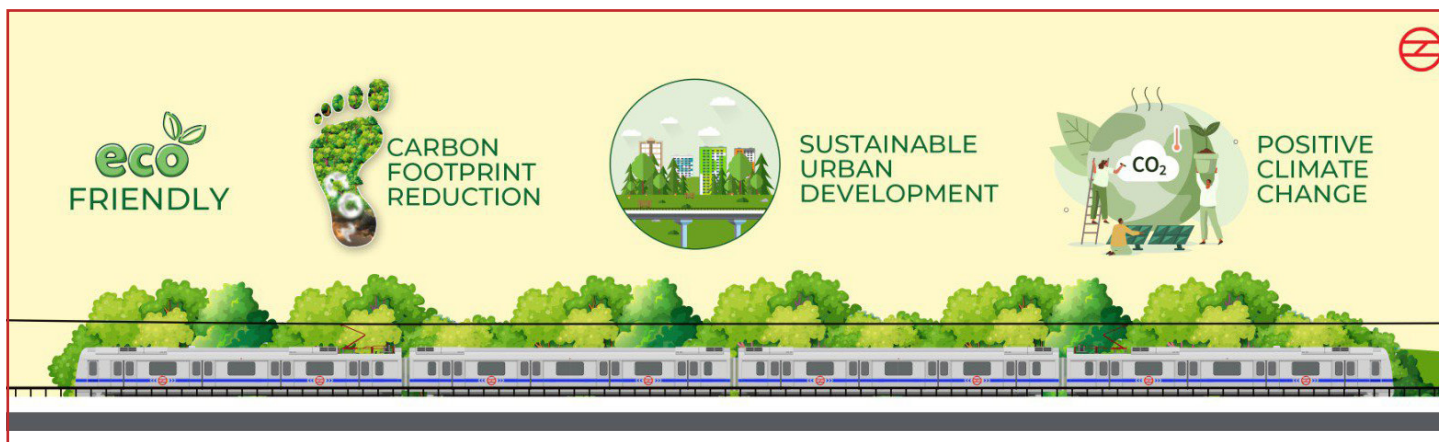
from Orlando to South Florida became operational. Planned U.S. HSR systems include Brightline West (Las Vegas to Southern California), the California High-Speed Rail Authority (Los Angeles to San Francisco), Texas Central (Dallas to Houston), and the Cascadia Project (Portland, OR to Vancouver, BC). Connecting these regions has the potential to empower these communities and beyond.

Many academic and industry studies have documented the potential benefits of HSR in the United States, beginning with economic benefits. HSR economic analyses try to identify direct spending (e.g., direct jobs and value of contracts for primary contractors and subcontractors), indirect spending (e.g., products and services ordered from local suppliers), and induced spending (e.g., every dollar spent on HSR that results in additional consumer spending). One study estimates that the planned HSR system in California will generate more than 25,000 full-time equivalent job years valued at \$67,200 per job year between 2015 and 2029 under the most conservative scenario evaluated. The [California High-Speed Rail Authority \(CHSRA\)](#) estimates that HSR has generated an estimated 74,000 to 80,000 job years, \$5.6 billion to \$6.0 billion in labor income, and \$15 billion



IMPLEMENTING HIGH-SPEED RAIL (HSR) WILL PROVIDE AMERICANS WITH MORE TRANSPORTATION CHOICES. IT WILL ALSO MAKE SURE THAT AMERICA REMAINS AN ECONOMIC ENGINE, AND MEETS THE ENVIRONMENTAL AND ENERGY CHALLENGES OF THIS CENTURY.





to \$16 billion in economic output between 2006 and 2022.

HSR supports domestic manufacturing, too. A 2015 estimate found that the rail manufacturing industry supports 90,000 jobs and that more than 750 companies in at least 39 states manufactured components for passenger rail and transit; additionally, more than 540 additional companies are manufacturing sub-components, materials, track, and infrastructure in the Midwest and Mid-Atlantic. A single HSR corridor benefits not just that corridor but a vast array of suppliers across the nation and the [U.S. economy as a whole](#).

High-speed rail means not only investing in the economy but also in our environment and a sustainable future. Research has shown that high-speed rail in the U.S. could save up to 800 billion tons of CO<sub>2</sub> emissions over a 40-year period, or approximately 2 trillion miles traveled in a typical 22 MPG gas-based car. The California High-Speed Rail Authority estimates the state's HSR project will save 102 million metric tons of carbon dioxide equivalents (MTCO<sub>2</sub>e) over the first 50 years of the project's operating life.

HSR could also provide cost savings associated with foregone infrastructure improvements. One study found it would cost an estimated [\\$122-199](#)

[billion](#) to provide the equivalent highway and airport capacity that the San Francisco to Los Angeles high-speed rail network would provide.

The economic and environmental potentials of HSR—its capacity to address critical 21st-century challenges—demonstrate its significance in the future of transportation. HSR offers a sustainable alternative to other modes of travel through potentially reducing greenhouse gas emissions and alleviating congestion on highways and at airports. High-speed rail systems can efficiently reduce travel times between major cities and foster regional and national economic development. With an increasing need for environmental consciousness, awareness of population growth, and enhanced connectivity, high-speed

rail represents a transformative solution that can reshape the way we travel, contributing to a more sustainable and connected world.

“

**“There isn’t a train I wouldn’t take, no matter where it’s going.”**

— *Edna St. Vincent Millay*





# CRISI GRANTS 2022

## THE OFFICIAL SUMMARY

Contribution By: David Wilcock, VHB

In late September, the Federal Railroad Administration (FRA) announced the awarding of the Fiscal Year (FY) 2022 Consolidated Rail Infrastructure and Safety Improvement (CRISI) Program selections. Over \$1.4 Billion was awarded to support 70 projects in 35 states. Awards were for both passenger and freight rail projects. The largest grant recipients were Amtrak and the California High Speed Rail Authority. Amtrak and the CHSRA received a combined \$400 Million to support five projects. In all, 10 projects supporting intercity rail passenger service received \$659,000,000.

There are four big intercity project winners from the FY2022 round of awards. The largest is the CHSRA's grant award of approximately \$202 Million to progress the design, construction and right-of-way acquisition for grade separated crossing in Shaftner. This project will benefit freight rail and San Joaquin intercity rail operations as well as the future high speed rail line. Another big winner was the Gulf Coast Corridor Improvement Project which will restore intercity passenger rail service between Mobile AL and New Orleans LA. The \$178.5 million grant will support the improvements that allow two daily roundtrips between the city pairs. MassDOT's award of

\$108 million to develop early action improvements supporting restoration of the Inland Route service (Boston-Springfield-New Haven) was the third largest award. The Virginia Passenger Rail Authority received the fourth largest award of up to \$100 million to construct a flyover along CSX's RF&P line between Franconia and Springfield. This project will allow passenger rail trains to move from one side of the corridor to the other side without interfering with CSX freight operations. The details on these four projects as well as the other six intercity rail related projects from the FRA CRISI webpage is below:

**CALIFORNIA-SIX GRADE SEPARATIONS IN THE CITY OF SHAFTER PROJECT (UP TO \$201,946,942)**

California High-Speed Rail Authority (CHSRA)

The proposed project involves final design, right-of-way acquisition, and construction activities for improvements to six (6) grade crossings and track-related improvements. In an area where Burlington Northern Santa Fe Railway's existing main line and the CHSRA's future rail line parallel each other, the project will remove seven (7) at-grade crossings and convert

them to grade-separated crossings, closing one crossing, in a rural, disadvantaged community within the Central Valley. The project aligns with the selection criteria by improving system and service performance and safety as it will enhance safety to freight rail and Amtrak San Joaquins trains, as well as improve traffic flows by eliminating encounters with blocked crossings, which will reduce delays to emergency vehicles and motorists, and non-motorized users. CHSRA will provide a 20 percent non-Federal match. This project qualifies for the statutory set-asides for projects in Rural Areas and new Intercity Passenger Rail.

**CALIFORNIA – SACRAMENTO TO ROSEVILLE THIRD TRACK – PHASE 1 PROJECT (UP TO \$42,510,000)**  
CAPITOL CORRIDOR JOINT POWERS AUTHORITY (CCJA)

The proposed project involves project development, final design, and construction activities for various track-related and signal improvements, enhancements to certain grade crossings, one new bridge, trespassing prevention measures, and other related infrastructure within Union Pacific Railroad's (UPRR) corridor. The project aligns with the selection criteria by increasing capacity to meet existing and anticipated demand as it will directly benefit the Capitol Corridor passenger rail



service from Sacramento, CA to Roseville, CA, allowing two additional daily round trips to operate on a new third main line which will preserve the capability and fluidity of UPRR's main line. The state of California will provide a 71.9 percent non-Federal match. Other Federal funds consist of \$2,000,000 from the Federal Highway Administration.

#### DISTRICT OF COLUMBIA – NORTHEAST CORRIDOR FENCING PROGRAM (UP TO \$8,800,000)

National Railroad Passenger Corporation (Amtrak)

The proposed project involves project development activities to inform trespassing prevention capital projects (e.g., fence installation) at sites vulnerable to, and at high risk for trespassing incidents along the Northeast Corridor. The project aligns with the selection criteria by enhancing safety as it will help Amtrak to plan and streamline efforts for future related capital work that will result in increased safety for communities that Amtrak operates in and through. Amtrak will provide a 20 percent non-Federal match. This project qualifies for the statutory set-aside for projects to prevent trespassing.

#### FLORIDA – TRESPASSING IDENTIFICATION AND CLASSIFICATION SYSTEM PROJECT (UP TO \$1,648,000)

Brightline Trains Florida, LLC (Brightline)

The proposed project involves research and safety program activities to develop a software that utilizes artificial intelligence (AI) to collect reliable and precise data about trespassing locations and trespasser behavior. The project aligns with the selection criteria and Administration

priority by enhancing safety as it will help mitigate the higher number of trespassing incidents that occur in south Florida, and will provide real-time computer-driven analysis and data aggregation of trespass activity along the shared Florida East Coast Railway and Brightline corridor. In addition, the project will guide targeted infrastructure, enforcement, and education decisions for Brightline, local partners, and the Florida Department of Transportation. The project utilizes an innovative (AI based) research and safety program to address trespassing behavior in a corridor with one of the -a highest incidence of fatal trespassing incidents in the country. Brightline and Wi-Tronix will contribute a combined 20 percent non-Federal match. This project qualifies for the statutory set-aside for projects to prevent trespassing.

#### FLORIDA – CENTRAL FLORIDA RAIL CORRIDOR CROSSINGS AND TRESPASSING SAFETY IMPROVEMENTS PROJECT (UP TO \$6,928,241)

Florida Department of Transportation

The proposed project involves final design and construction activities to complete various improvements at approximately 110 highway-rail grade crossings (e.g., pavement markings, signage, surface replacement, and installing traffic signal equipment (pre-emption, pre-signals, and queue-cutter related, etc.)), as well as complete trespassing prevention improvements at select locations. The project aligns with the selection criteria by enhancing safety as it will help increase the safety of pedestrians, motorists, two freight rail carriers (CSX Transportation and Florida Central Railroad), Amtrak, and Sun Rail commuter service at certain at-grade crossings along the Central Florida Rail Corridor. The project will also mitigate pedestrian trespassing to channel trespassers to the grade crossing or pedestrian crossings. The Florida Department of Transportation will provide a 50 percent non-Federal match. This project qualifies for the statutory set-aside for projects to prevent trespassing.

LOUISIANA – MISSISSIPPI-LOUISIANA GRADE CROSSING





## IMPROVEMENT PROJECT (UP TO \$1,826,000)

National Railroad Passenger Corporation (Amtrak)

The proposed project involves systems planning activities for a corridor study that will evaluate the safety, roadway connectivity, reliability, and potential improvements, including but not limited to trespassing prevention measures, to 395 highway-rail grade crossings on Amtrak's City of New Orleans route through Mississippi and Louisiana. In partnership with Canadian National Railway and the states of Louisiana and Mississippi, Amtrak will conduct the study and prioritize the grade crossings to be improved, among other related tasks. The project aligns with the selection criteria by improving system and service performance and safety as it will facilitate safety improvements along this corridor that will also improve reliability of the service. Amtrak will provide a 20 percent non-Federal match. This project qualifies for the statutory set-asides for projects in Rural Areas, new Intercity Passenger Rail, and trespass prevention.

## MASSACHUSETTS – CONNECTING THE COMMONWEALTH: EARLY ACTIONS FOR THE INLAND ROUTE PROJECT (UP TO \$108,085,280)

Massachusetts Department of Transportation (MassDOT)

The proposed project involves project development, final design, and construction activities for various track, signal, grade crossing and bridge improvements on the Inland Route corridor, which is CSX Transportation-owned and MassDOT-owned infrastructure. The project

aligns with the selection criteria by improving system and service performance and ability to meet existing and anticipated demand as it will increase capacity to safely accommodate the addition of two round trip Amtrak Lake Shore Limited intercity passenger trains per day at higher speeds, while maintaining current freight operations. The improvements will raise the track class in many locations from FRA Class tracks 2 and 3 currently, to Class 4 standard and address multiple areas of track alignment within curves that were not designed for the 80-mph maximum speed allowed under Class 4 on railroads equipped with Positive Train Control. MassDOT and Amtrak will contribute funds totaling a 20 percent non-Federal match. This project qualifies for the statutory set-aside for new Intercity Passenger Rail projects.

## MISSISSIPPI – GULF COAST CORRIDOR IMPROVEMENT PROJECT (UP TO \$178,435,333)

NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)

The proposed project involves project development, final design and construction activities for various track and signal-related improvements, upgrades to certain grade crossings, and improvements to certain stations along a key rail corridor in the Gulf Coast region, from New Orleans, LA to Mobile, AL. The project aligns with the selection criteria by enhancing competitiveness, reliability and ability to meet existing or anticipated demand as it will help facilitate the introduction of intercity passenger rail service (two round trip trains per day) while mitigating potential adverse impacts to freight operations from CSX Transportation,

Norfolk Southern Railway, and the Port of Mobile, as well as help achieve targeted trip times and service reliability. The project also aligns with the Administration's priority to transform the national rail network by encouraging the development of new intercity passenger rail. A combination of funds from Amtrak, the states of Mississippi, Alabama, and Louisiana, CSX Transportation, and Norfolk Southern Railway will provide a 20 percent non-Federal match. This project qualifies for the statutory set-asides for projects in Rural Areas and New Intercity Passenger Rail.

## PENNSYLVANIA – ENGINEERING TRACK FOREMEN WORKFORCE DEVELOPMENT APPRENTICESHIP TRAINING PROGRAM (UP TO \$8,800,000)

National Railroad Passenger Corporation (Amtrak)

The proposed project involves workforce development activities to implement a pilot engineering Track Foremen/Inspectors workforce development apprenticeship training program to further develop the existing program and increase the overall knowledge base required to safely supervise field operations. This project aligns with the selection criteria by improving ability to meet existing and anticipated workforce demand. The proposed project also involves other activities for an additional program that will help employees obtain full Track Foremen/Inspectors certification. Recognizing there may not be an adequate number of seasoned, highly-skilled employees providing knowledge transfer and mentorship, the project will support the development of



a comprehensive training requirement for new employees and help provide upward mobility for current employees. The project also supports a key Administration priority to pursue non-infrastructure safety and workforce development programs. Amtrak is providing a 20 percent non-Federal match.

#### VIRGINIA – FRANCONIA-SPRINGFIELD BYPASS PROJECT (UP TO \$100,000,000)

##### Virginia Passenger Rail Authority

The proposed project involves final design and construction activities for a new flyover rail bridge on the RF&P corridor, as CSX mainline running from Washington, DC to Richmond, VA, and a critical East Coast rail connection that connects the Northeast Corridor with the southeast USA. The existing volume on the corridor, approximately 50-70 trains per day, consistently leads to train interference. The project aligns with

the selection criteria by improving system and service performance and improving integration with other modes as it will allow intercity and commuter passenger trains (Amtrak and Virginia Railway Express) to fluidly cross over two CSX Transportation's mainline freight rail tracks and avoid at-grade conflicts and delays, resulting in the improved reliability and efficiency of rail services. The Virginia Passenger Rail Authority and Amtrak will provide a 50 percent non-Federal match.

State	Project	Agency	Amount
CA	Six Grade Separations in the City of Shafter Project	CHSRA	\$201,946,942
CA	Sacramento to Roseville Third Track – Phase 1 Project	CCJA	\$42,510,000
DC	Northeast Corridor Fencing Program	Amtrak	\$8,800,000
FL	Trespassing Identification and Classification System Project	Brightline	\$1,648,000
FL	Central Florida Rail Corridor Crossings and Trespassing Safety Improvements Project	FDOT	\$6,928,241
LA	Mississippi-Louisiana Grade Crossing Improvement Project	Amtrak	\$1,826,000
MA	Connecting the Commonwealth: Early Actions for the Inland Route Project	MassDOT	\$108,085,280
MS	Gulf Coast Corridor Improvement Project	Amtrak	\$178,435,333
PA	Engineering Track Foremen Workforce Development Apprenticeship Training Program	Amtrak	\$8,800,000
VA	Franconia-Springfield Bypass Project	VPRA	\$100,000,000
		<b>TOTAL</b>	<b>\$658,979,796</b>
		Amtrak	\$197,861,333
		CHSRA	\$201,946,942
		<b>TOTAL</b>	<b>\$399,808,275</b>



# CORRIDOR ID PROGRAM

## SUPPORTING LONG-TERM DEVELOPMENT EFFORTS

The Corridor Identification and Development (Corridor ID) Program is a comprehensive intercity passenger rail planning and development program that will help guide intercity passenger rail development throughout the country and create a pipeline of intercity passenger rail projects ready for implementation.

The Federal Railroad Administration (FRA) announced \$34,500,000 in Fiscal Year (FY) 2022 grant funding for the Corridor Identification and Development (Corridor ID) Program. Grants were awarded to 69 Corridor ID grant applicants across 44 states and the District of Columbia under the Notice of Solicitation of Corridor Proposals and Funding Opportunity for the Corridor Identification and Development Program (Notice).

On December 20, 2022, FRA published the Notice in the Federal Register, inviting applicants to submit applications for entry into the Corridor ID program. Unlike other FRA discretionary grant programs, the Notice did not include a funding amount for the Corridor ID program, as entry into the program

was limited to an initial funding amount of up to \$500,000 per recipient for the preparation of a scope of work for the preparation of a Service Development Plan, including environmental clearance and preliminary engineering.

This program is authorized by 49 U.S.C. § 25101, and funds for the Corridor ID Program are authorized by 49 U.S.C. § 24911(k) and were made available by Consolidated Appropriations Act, 2022, Div. I Tit. I, Pub. L. 117-103 (March 15, 2022) (2022 Appropriation), and Division J of the Infrastructure Investment and Jobs Act (IIJA), Pub. L. 117-58 (November 15, 2021).

The purpose of the Corridor ID Program is to develop a comprehensive intercity passenger rail

planning and development program that will help guide intercity passenger rail development throughout the country and create a pipeline of intercity passenger rail projects ready for implementation. Unlike previous Federal intercity passenger rail planning efforts, the Corridor ID Program is intended both to support a sustained long-term development effort, and to set forth a capital project pipeline ready for Federal (and other) funding. The Corridor ID Program is intended to become the primary means for directing Federal financial support and technical assistance toward the development of proposals for new or improved intercity passenger rail services throughout the United States.

The table below describes the successful grant recipients and corridor descriptions:

Project Name	Applicant	Project Description
<b>Anchorage North and South Corridor</b>	Alaska Railroad	The proposed Corridor would provide improvements to the existing intercity passenger rail services operated by Alaska Railroad Corporation between Fairbanks and Seward, AK, including Anchorage, Whittier, Wasilla, Talkeetna, Denali National Park, Nenana, and other intermediate points by adding new frequencies, reducing travel times and improving reliability. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Phoenix - Tucson Corridor</b>	Arizona Department of Transportation	The proposed Corridor would reconnect Phoenix (Buckeye) to Tucson, AZ with multiple daily frequencies. The proposed Corridor would reinstate service on an existing alignment over which Amtrak discontinued service in 1997, rerouting the long-distance Sunset Limited to a more southerly alignment through Maricopa, AZ (the corridor would use the same route as the existing Sunset Limited/Texas Eagle between Picacho and Tucson). The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.



Project Name	Applicant	Project Description
<b>High Desert Intercity High-Speed Rail Corridor</b>	Antelope Valley Transit Authority	The proposed Corridor would connect Victor Valley to Palmdale, CA. The proposed Corridor would provide new high speed rail service on a new alignment, serving to link together two other high speed rail lines under development: Brightline West (Las Vegas, NV to Rancho Cucamonga, CA) and California High Speed Rail Phase 1 (San Francisco to Los Angeles/Anaheim, CA). The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>San Joaquin Valley Corridor</b>	California Department of Transportation	The proposed Corridor would provide improvements to the existing state-supported San Joaquins between Sacramento/Oakland and Merced, CA with an extension north from Sacramento to Chico and Redding, CA. The proposed Corridor would also include new frequencies. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Los Angeles – San Diego – San Luis Obispo (LOSSAN) Rail Corridor</b>	California Department of Transportation	The proposed Corridor would enhance the existing Pacific Surfliner between San Luis Obispo to San Diego, CA, with an extension south to San Ysidro, CA. The proposed Corridor would also include new frequencies and improvements to reliability. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Coachella Valley Rail Corridor</b>	California Department of Transportation	The proposed Corridor would provide new service between Los Angeles and Coachella, CA using existing alignments currently served by Amtrak's long-distance Southwest Chief (Los Angeles to Colton via Fullerton) and Sunset Limited/Texas Eagle (Colton to Coachella), with intermediate stops including Fullerton, Riverside, Palm Springs and Indio, CA. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Central Coast Corridor</b>	California Department of Transportation	The proposed Corridor would provide new service over a route currently only served by Amtrak's long-distance Coast Starlight between San Jose and San Luis Obispo, CA by adding new frequencies. The San Jose to Salinas and Santa Cruz to Watsonville segments would be assessed and phased as part of the larger corridor the applicant plans to implement. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Capitol Corridor</b>	California Department of Transportation	The proposed Corridor would enhance the existing state-supported Capitol Corridor between San Jose and Auburn, CA with an extension to San Francisco, Salinas, and Novato, CA and to Reno/Sparks, NV. The proposed Corridor would also include new frequencies. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>California High-Speed Rail Phase 1 Corridor</b>	California High-Speed Rail Authority	The proposed Corridor would connect San Francisco to Los Angeles/Anaheim, CA. The proposed Corridor would provide new service on a blend of new and existing alignments. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Colorado Front Range Corridor</b>	Front Range Passenger Rail District	The proposed Corridor would connect Fort Collins to Pueblo, CO, with intermediate stops at Boulder, Denver, Colorado Springs and other points. The proposed Corridor would provide new service on an existing alignment. The Corridor sponsor would enter Step 2 of the program and continue development of its existing service development plan that was funded through a prior FRA grant.



Project Name	Applicant	Project Description
<b>Hartford Line Corridor</b>	Connecticut Department of Transportation	The proposed Corridor would provide improvements to the existing Amtrak Northeast Regional, Springfield Shuttles, Valley Flyer and CTrail Hartford Line service as well as the Vermonter and future Inland Route Corridors between New Haven, CT and Springfield, MA, inclusive of Hartford, CT, by restoring and constructing new rail infrastructure including track, stations, signal upgrades and safety enhancements, for the purpose of increasing regional intercity passenger rail service through additional frequencies and improved reliability. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Daily Cardinal Service</b>	National Railroad Passenger Corporation (Amtrak)	The proposed Corridor would provide improvements to the existing Amtrak Cardinal Service between New York City, NY and Chicago, IL via Philadelphia, PA, Baltimore, MD, Washington, DC, and the States of Virginia, West Virginia, Kentucky, Ohio, Indiana, and Illinois (including Cincinnati, OH and Indianapolis, IN) by increasing service frequency from three days per week to daily. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Diamond State Line</b>	Delaware Transit Corporation	The proposed Corridor would connect at least one point on the Northeast Corridor in northern Delaware (Newark or Wilmington) with a point in eastern Maryland (Salisbury or Berlin) via central Delaware, including the state capital of Dover. The proposed Corridor would provide new service on an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Miami-Orlando-Tampa Corridor</b>	Florida Department of Transportation	The proposed Corridor would connect Miami, Orlando and Tampa, FL. The proposed Corridor would provide new or enhanced service on one or more existing alignments, and potentially a new alignment between Orlando International Airport and Tampa. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Jacksonville-Orlando-Miami Corridor</b>	Florida Department of Transportation	The proposed Corridor would connect Jacksonville, Orlando and Miami, FL. The proposed Corridor would provide new or enhanced service on one or more existing alignments. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Atlanta to Savannah Corridor</b>	Georgia Department of Transportation	The proposed Corridor would connect Atlanta and Savannah, GA. The proposed Corridor would provide new service on existing or new alignment, with potential intermediate stops including Athens, Augusta and Macon, GA. The Corridor sponsor would enter Step 2 of the program and continue developing its service development plan that was funded through a previous FRA grant.
<b>Peoria to Chicago Passenger Rail Service</b>	City of Peoria	The proposed Corridor would connect Peoria, IL to Chicago, IL through Ottawa, IL. The proposed Corridor would provide new service on an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Chicago to Quad Cities Service Extension Program</b>	Illinois Department of Transportation	The proposed Corridor would connect Chicago, IL to Moline, IL through Naperville, IL and Wyanet, IL. The proposed Corridor would provide new service on an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Chicago to Carbondale Corridor</b>	Illinois Department of Transportation	The proposed Corridor would provide improvements to the existing Illini/Saluki service between Chicago, IL and Carbondale, IL by improving travel times and reliability. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.



Project Name	Applicant	Project Description
<b>Chicago to St. Louis Corridor</b>	Illinois Department of Transportation	The proposed Corridor would provide improvements to the existing Lincoln Service between Chicago, IL and St. Louis, MO by improving travel times and reliability. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Chicago, Fort Wayne, Columbus, and Pittsburgh</b>	City of Fort Wayne	The proposed Corridor would connect Chicago, IL to Pittsburgh, PA through Fort Wayne, IN, and Columbus, OH. The proposed Corridor would reinstate service on an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Indianapolis - Chicago Corridor</b>	Indiana Department of Transportation	The proposed Corridor would provide improvements to the existing Amtrak long-distance Cardinal service between Indianapolis, IN and Chicago, IL by adding new frequencies and improving travel times. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan. This effort is being undertaken in coordination with Amtrak's Corridor ID project to increase service frequency on the entirety of the New York-Chicago <i>Cardinal</i> route from thrice weekly to daily.
<b>Heartland Flyer Extension</b>	Kansas Department of Transportation	The proposed Corridor would connect the existing Heartland Flyer intercity passenger rail service between Fort Worth, TX, and Oklahoma City, OK with an extension north to Wichita, KS and then Newton, KS. The proposed Corridor would include new station stops in Edmond, OK, Perry, OK, Ponca City, OK, Arkansas City, KS, Wichita, KS, and Newton, KS. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Louisville-Indianapolis Passenger Rail Corridor</b>	Kentuckiana Regional Planning and Development Agency	The proposed Corridor would connect Indianapolis, IN to Louisville, KY. The proposed Corridor would provide new service on an existing alignment over which Amtrak discontinued service in the early 2000s. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Baton Rouge - New Orleans Corridor</b>	Louisiana Department of Transportation and Development	The proposed Corridor would connect Baton Rouge, LA and New Orleans, LA. The proposed Corridor would provide new intercity passenger rail service on an existing alignment that last hosted passenger trains in 1969. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Daily <i>Sunset Limited</i> Service</b>	National Railroad Passenger Corporation (Amtrak)	The proposed Corridor would provide improvements to the existing Amtrak long-distance <i>Sunset Limited</i> between Los Angeles, CA and New Orleans, LA by increasing service frequency from thrice weekly to daily. Intermediate cities served include Houston, San Antonio and El Paso, TX and Tucson, AZ. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Boston and Albany Corridor</b>	Massachusetts Dept. of Transportation	The proposed Corridor would connect Boston, MA and Albany, NY via Springfield, MA. The proposed Corridor would provide up to eight daily round-trip passenger trains on an existing alignment that is currently being used by Amtrak's long-distance Lake Shore Limited. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.



Project Name	Applicant	Project Description
<b>Downeaster Corridor</b>	Northern New England Passenger Rail Authority	The proposed Corridor would improve the existing Amtrak Downeaster corridor, connecting Boston, MA to Brunswick, ME via Portland, ME, southwestern coastal Maine and southeastern New Hampshire, with an extension east to Rockland, ME. The proposed Corridor would also include added frequencies, reduced travel times, improved reliability, a new infill station at West Falmouth, ME, and technology improvements to make it easier for passengers to connect between the Downeaster and other Amtrak services in Boston (where the Downeaster serves a different station from all other Amtrak routes). The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Wolverine Corridor</b>	Michigan Department of Transportation	The proposed Corridor would connect the existing <i>Wolverine</i> service between Chicago, IL and Detroit/Pontiac, MI with an extension to Windsor, Ontario, Canada. The proposed Corridor would also include improvements to travel times and reliability. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Chicago to Grand Rapids Corridor</b>	Michigan Department of Transportation	The proposed Corridor would provide improvements to the existing <i>Pere Marquette</i> service between Grand Rapids, MI and Chicago, IL by adding new frequencies and improving reliability. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Chicago to Port Huron Corridor</b>	Michigan Department of Transportation	The proposed Corridor would provide improvements to the existing Blue Water service between Port Huron, MI and Chicago, IL by adding new frequencies and improving reliability. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Northern Lights Express</b>	Minnesota Department of Transportation	The proposed Corridor would connect Minneapolis, MN to Duluth, MN through Cambridge, MN and Hinckley, MN. The proposed Corridor would provide new service on an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Kansas City, MO to St Joseph, MO</b>	Missouri Department of Transportation	The proposed Corridor would connect St. Joseph, MO and Kansas City, MO, and include connection with the existing state-supported <i>Missouri River Runner</i> route to St. Louis, MO. The activities undertaken as part of the development of the Corridor would result in a new proposed route. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Hannibal Extension of Existing Chicago-Quincy Corridor</b>	Missouri Department of Transportation	The proposed Corridor would connect Hannibal, MO to Chicago, IL by extending an existing State-supported route (the <i>Illinois Zephyr/Carl Sandburg</i> between Chicago and Quincy, IL) and the activities undertaken as part of the development of the Corridor would result in an extension of an existing route. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Gulf Coast Passenger Rail Service</b>	Southern Rail Commission	The proposed Corridor would restore intercity passenger rail service between New Orleans, LA and Mobile, AL, including station stops in Bay St. Louis, Gulfport, Biloxi and Pascagoula, MS. This is a portion of a route that Amtrak suspended indefinitely in 2005. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.



Project Name	Applicant	Project Description
<b>North Coast Hiawatha</b>	Big Sky Passenger Rail Authority	The proposed Corridor would restore a connection between Chicago, IL to Seattle, WA or Portland, OR through Milwaukee, WI; La Crosse, WI; Eau Claire, WI; St. Paul, MN; Fargo, ND; Bismarck, ND; Dickson, ND; Glendive, MT; Billings, MT; Bozeman, MT; Butte, MT; Helena, MT; Missoula, MT; St. Regis, MT; Sandpoint, MT; Spokane, WA; and Pasco, WA. The proposed Corridor would provide new service (restoring a route that Amtrak discontinued in 1979) on an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Wilmington to Raleigh, North Carolina Corridor</b>	North Carolina Department of Transportation	The proposed Corridor would connect Raleigh, NC to Wilmington, NC. The proposed Corridor would provide new service on an existing alignment, part of which has been abandoned and would need to be reconstructed, to include new stations. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Fayetteville to Raleigh, North Carolina Corridor</b>	North Carolina Department of Transportation	The proposed Corridor would provide a new service connecting Fayetteville, NC with Raleigh, NC, with intermediate stops at Lillington, and Fuquay-Varina, NC, using an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Charlotte to Kings Mountain, North Carolina Corridor</b>	North Carolina Department of Transportation	The proposed Corridor would connect Kings Mountain, NC to Charlotte, NC. The proposed Corridor would provide new service on existing alignment with capacity improvements west of the Charlotte Gateway Station and likely extending service to Kings Mountain, in addition to track, crossover, or signal improvements. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Asheville to Salisbury, North Carolina Corridor</b>	North Carolina Department of Transportation	The proposed Corridor would connect Salisbury, NC to Asheville, NC. The proposed Corridor would provide new service on an existing alignment between Asheville and Salisbury in western North Carolina, following a line that last hosted passenger trains in 1975. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Winston-Salem to Raleigh, North Carolina Corridor</b>	North Carolina Department of Transportation	The proposed Corridor would connect Winston-Salem, NC with Raleigh, NC, with intermediate stops at Greensboro, Burlington, Durham, and Cary, complementing the existing state-supported Piedmont and Carolinian services. The proposed Corridor would also include new frequencies, improvements to reliability, and new stations. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Charlotte, North Carolina to Atlanta, Georgia Corridor</b>	North Carolina Department of Transportation	The proposed Corridor would provide new service on a new high speed rail alignment between Charlotte, NC and Atlanta, GA, with potential intermediate stops including Greenville-Spartanburg International Airport in South Carolina and Augusta and Athens, GA, then serving a downtown Atlanta station and terminating at Atlanta's Hartsfield-Jackson International Airport, the world's busiest airport. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.



Project Name	Applicant	Project Description
<b>Charlotte, North Carolina to Washington, DC Corridor</b>	North Carolina Department of Transportation	The proposed Corridor would provide improvements to the existing state-supported Carolinian service between Charlotte, NC and Washington, DC (with existing service continuing north to New York, NY) by improving/adding services in Greensboro, Winston-Salem, High Point, Raleigh, Durham, Salisbury, and Burlington NC and Petersburg, Richmond, Fredericksburg and Alexandria, Virginia by addressing infrastructure capacity constraints. Improvements include constructing/rehabilitating a partially abandoned alignment between Raleigh, NC and Petersburg, VA that is more direct than the existing routing through Rocky Mount, NC, potentially shaving more than an hour off the end-to-end travel time. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Brightline West High-Speed Corridor</b>	Nevada Department of Transportation	The proposed Corridor would connect Rancho Cucamonga, CA to Las Vegas, NV, providing new service on a new high speed rail alignment with intermediate stops at Hesperia and Victorville, CA. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Amtrak to Long Island</b>	National Railroad Passenger Corporation (Amtrak)	The proposed Corridor would better connect Long Island, NY to the national intercity passenger train network by extending three existing daily Amtrak <i>Northeast Regional</i> roundtrips between Washington, DC and New York, NY east to Ronkonkoma, NY, with stops at Jamaica (Queens, NY) and Hicksville, NY. The proposed Corridor would entail track, station and infrastructure upgrades to accommodate these trains and better integrate Amtrak service with existing Long Island Railroad commuter service. The Corridor would enter Step 1 of the program and begin development of a scope, schedule, and cost estimate for preparing a service development plan.
<b>Empire Corridor</b>	New York State Department of Transportation	The proposed Corridor would provide improvements to the existing Amtrak Empire Service between New York, NY and Niagara Falls, NY via Albany, Utica, Syracuse, Rochester, and Buffalo by adding frequencies, reducing travel time, and improving reliability. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Adirondack Corridor</b>	New York State Department of Transportation	The proposed Corridor would provide improvements to the existing Amtrak Adirondack service between New York City, NY and Montreal, Quebec, Canada via Albany, NY, by completing a U.S. Customs Pre-Clearance Facility in Montreal, adding a second daily round-trip, and making track and infrastructure improvements to increase reliability, reduce trip times, increase safety, and achieve a state of good repair. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Cleveland-Columbus-Dayton-Cincinnati (3C&amp;D) Corridor</b>	Ohio Rail Development Commission	The proposed Corridor would connect Cleveland, OH, Columbus, OH, Dayton, OH, and Cincinnati, OH. The proposed Corridor would provide new service on an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Cleveland-Toledo-Detroit Corridor</b>	Ohio Rail Development Commission	The proposed Corridor would connect Cleveland, OH to Detroit, MI through Toledo, OH. The proposed Corridor would provide new service on an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Keystone Corridor: Pittsburgh to Philadelphia</b>	Pennsylvania Department of Transportation	The proposed Corridor would provide improvements to the existing Amtrak <i>Keystone</i> and <i>Pennsylvanian</i> services between Philadelphia and Pittsburgh, PA via Lancaster, Harrisburg, Altoona, Johnstown and other intermediate points by adding frequencies (including at least one additional daily round-trip between Harrisburg and Pittsburgh), reducing end-to-end travel time, and improving reliability. The Corridor sponsor would enter Step 1 of the program to develop



Project Name	Applicant	Project Description
		a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Reading - Philadelphia - New York Corridor</b>	Schuylkill River Passenger Rail Authority	The proposed Corridor would connect Reading, PA with Philadelphia, PA and New York, NY, with new intermediate stops at Pottstown, Phoenixville and potentially Norristown, PA, then using the Northeast Corridor between Philadelphia and New York. The proposed Corridor would provide new service (four to eight daily roundtrips) on an existing alignment that last hosted passenger trains in 1983. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Scranton to New York Penn Station Corridor</b>	Pennsylvania Department of Transportation	The proposed Corridor would connect Scranton, PA and New York, NY, with intermediate stops at Stroudsburg and Mt. Pocono, PA; Blainstown, Dover, Montclair, Morristown and Newark, NJ. The proposed Corridor would provide new service (three daily roundtrips) on a mostly existing alignment, plus abandoned track to be rebuilt. The entirety of the alignment for this corridor is under public ownership. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Atlanta-Chattanooga-Nashville-Memphis Corridor</b>	City of Chattanooga	The proposed Corridor would connect Atlanta, GA to Chattanooga, Nashville, and Memphis, TN. The proposed Corridor would provide new service on existing alignments. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Amtrak Texas High-Speed Rail Corridor</b>	National Railroad Passenger Corporation (Amtrak)	The proposed Corridor would connect Dallas and Houston, TX with a new, dedicated and grade-separated high speed passenger rail service. The proposed Corridor would provide new service on a new alignment, with station stops in Dallas, Brazos Valley, and Houston. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Fort Worth-to-Houston High Speed Rail Corridor</b>	North Central Texas Council of Governments	The proposed Corridor would connect Fort Worth, Dallas, and Houston, TX with a new high speed passenger rail service. The proposed Corridor would provide new service on a new alignment, with station stops in Fort Worth, Arlington, Dallas, Brazos Valley, and Houston. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Texas Triangle: Dallas-Fort Worth – Houston Intercity Passenger Rail Corridor</b>	Texas Department of Transportation	The proposed Corridor would connect Fort Worth, Dallas and Houston, Texas with a new conventional intercity passenger rail service over an existing alignment over which Amtrak discontinued service (between Dallas and Houston) in 1995. The proposed Corridor would have additional station stops in Corsicana, Hearne, College Station, and Navasota, TX. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Houston to San Antonio Corridor</b>	Texas Department of Transportation	The proposed Corridor would connect Houston and San Antonio, TX with a new conventional intercity passenger rail service using the route of Amtrak's existing long-distance Sunset Limited service. The proposed Corridor would have additional station stops in Rosenberg, Flatonia, and Seguin, TX. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.



Project Name	Applicant	Project Description
<b>I-20 Corridor Intercity Passenger Rail Service</b>	Southern Rail Commission	The proposed Corridor would connect Dallas, TX to Meridian, MS and plans to serve the following cities in Texas: Fort Worth, Mineola, Longview, and Marshall; the following cities in Louisiana: Shreveport, Ruston, and Monroe; and the following cities in Mississippi: Vicksburg and Jackson. The proposed Corridor would provide new service on existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Washington, DC to Bristol, VA Corridor</b>	Virginia Department of Rail and Public Transportation	The proposed Corridor would extend the existing state-supported Amtrak Northeast Regional service between Washington, DC and Roanoke, VA with an extension to Bristol, VA. The proposed Corridor would also include new frequencies, improved travel times, improvements to reliability, and new stations, including a new infill station at Bedford, VA. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Commonwealth Corridor</b>	Virginia Department of Rail and Public Transportation	The proposed Corridor would connect Newport News with Richmond, Charlottesville and the New River Valley in Virginia. The proposed Corridor would provide new service on existing alignment, complementing existing state-supported Northeast Regional services connecting Washington, DC with Newport News and Roanoke, VA. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Vermont Corridor</b>	Vermont Agency of Transportation	The proposed Corridor would provide improvements to the existing Amtrak Vermonter service between Washington, DC and St. Albans, VT via Philadelphia, PA, New York, NY, Hartford, CT, Springfield, MA and other intermediate points by adding frequencies (starting with an additional daily round-trip between New York, NY and White River Junction, VT), reducing travel time (by 90 minutes between Springfield, MA and St. Albans, VT), improving reliability and extending service north to Montreal, Quebec, Canada (with the completion of a new U.S. Customs preclearance facility at Montreal's Central Station). The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Green Mountain Corridor</b>	Vermont Agency of Transportation	The proposed new Corridor would connect New York, NY with Burlington, VT via Albany, NY and Rutland, VT, dovetailing with the existing Amtrak Ethan Allen Express by providing new service to communities in southwestern Vermont (including Bennington and Manchester) and east-central New York State (Mechanicville). Consistent with the Notice and FRA's CID Program Discussion Process.
<b>Cascadia High-Speed Ground Transportation Corridor</b>	Washington State Department of Transportation	The proposed Corridor would connect Vancouver, Canada to Portland, OR, via Seattle, WA, with a potential future extension south to Eugene, OR. The proposed Corridor would provide new high speed rail service on a new alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Amtrak Cascades Corridor</b>	Washington State Department of Transportation	The proposed Corridor would provide improvements to the existing state-supported Amtrak <i>Cascades</i> between Vancouver, British Columbia, Canada, and Eugene, OR, including Seattle, WA, Portland, OR and other intermediate points, by reducing travel times, improving reliability and adding new frequencies. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.



Project Name	Applicant	Project Description
<b>TCMC Service Expansion via La Crosse</b>	Wisconsin Department of Transportation	The proposed Corridor would initiate a new daily round-trip between Chicago, IL and St. Paul, MN to complement the existing Amtrak long-distance Empire Builder, with an extension to Minneapolis, MN. The proposed Corridor would also include a study of potential additional frequencies. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Milwaukee to Green Bay (Hiawatha Service Extension)</b>	Wisconsin Department of Transportation	The proposed Corridor would connect the existing Hiawatha service between Chicago, IL and Milwaukee, WI with an extension to Green Bay, WI. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Milwaukee to Chicago Hiawatha Service Expansion</b>	Wisconsin Department of Transportation	The proposed Corridor would provide improvements to the existing Hiawatha service between Milwaukee, WI and Chicago, IL by adding new frequencies. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Milwaukee – Madison – Eau Claire – Twin Cities Passenger Rail Extension</b>	Wisconsin Department of Transportation	The proposed Corridor would connect Milwaukee, WI to Minneapolis, MN through Madison, WI and Eau Claire, WI. The proposed Corridor would provide new service on an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.
<b>Eau Claire-Twin Cities Corridor</b>	Eau Claire County	The proposed Corridor would connect St. Paul, MN to Eau Claire, WI. The proposed Corridor would provide new service on an existing alignment. The Corridor sponsor would enter Step 1 of the program to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan.



# CALIFORNIA HSR

## IN 2024, CALIFORNIA HIGH-SPEED RAIL LOOKS TO BUILD ON MOMENTUM

Contribution By: Kyle Simerly

As the backbone of California's ambitious State Rail Plan, California high-speed rail will connect the Central Valley to the rest of the Golden State.

Another year is nearly in the books, and 2023 has been a momentous one for California's high-speed rail project. As the California High-Speed Rail Authority (Authority) turns the page to 2024, major progress on America's first 220 mph and 100 percent renewably powered high-speed rail system is moving forward.

From expanded or completed construction projects putting people to work with well-paying jobs in California's Central Valley to new federal funding received and sought along with the advancement of major procurements, this most recent chapter of California's high-speed rail project cannot be missed. **BIG CONSTRUCTION PROGRESS, ECONOMIC IMPACT**

In 2023, the Authority opened 10 structures to the public along its 119 miles of active construction underway in the Central Valley. There are a total of 43 structures completed and 32 currently underway. This data and much more is reported monthly at the Authority's regular Board of Directors, [Finance and Audit Committee meetings](#).

Most recently, the [Avenue 9 overcrossing located in Madera County](#) was opened to traffic. The overcrossing is 177 feet long, more than 66 feet wide, and will take traffic over the future high-speed rail tracks.

The nine others this year were:

- [Kansas Avenue overcrossing in Kings County](#).
- [Davis Avenue overcrossing in Fresno County](#).
- [Merced Avenue grade separation in Kern County](#).
- [McCombs Avenue grade separation in Kern County](#).
- [Poso Avenue underpass in Kern County](#).
- [Elkhorn Avenue overcrossing in Fresno County](#).
- [Grade separations at Idaho and Dover Avenues in Kings County](#).
- [The Cedar Viaduct](#), a high-speed rail signature structure in Fresno County

Very soon, the Authority expects the very first of its construction packages, Construction Package 4, the southernmost 22-mile section of the 119 miles currently underway, to be complete. This would be the first constructed section of our project to reach this milestone, and among the first places high-speed rail tracks would be laid anywhere in the country.

All this work has had an immediate and tangible economic impact, pumping billions of dollars into California's economy and contributing to positive economic benefits throughout the state. As of this year, the Authority estimates that

all the people put to work, and all the dollars those people have spent, created a cumulative estimated economic impact since the project began of up to **\$16 billion**.

Cumulatively, through the life of the program, the Central Valley alone has seen at least 34,500 job-years of employment come from the project. To date, the Authority has paid more than **\$1.3 billion to certified Small Businesses, Disadvantaged Business Enterprises and Disabled Veteran Business Enterprises** in California for work on the high-speed rail program. The Authority has further estimated the initial 171-mile Merced to Bakersfield section would result in a total of 325,000 job-years of employment and total economic activity of \$65.1 billion.

### NEW FEDERAL FUNDING

Securing large new federal grants is a necessary and critical step to achieve the Authority's goal of delivering initial high-speed passenger rail service from Merced to Bakersfield between 2030 and 2033. Bipartisan Infrastructure Law (BIL) grant opportunities of more than \$75 billion have been identified, making significant funding available for projects like high-speed rail to compete.

The project is uniquely positioned to immediately deploy new federal funding investments that will supplement current state funds toward the



delivery of the initial high-speed rail line between Merced and Bakersfield and to advance design on crucial segments in both Northern and Southern California.

The Authority has submitted several federal grant applications, which are pending federal decisions, with plans to submit multiple federal grant applications over the 5-year BIL program with a total award target of \$8 billion. If funding is provided at this level, the federal share in the project would increase to between 35 and 37 percent.

Over the last few years, the Authority has received \$69 million in funding from three Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grants and almost \$202 million in September from the Consolidated Rail Infrastructure and Safety Improvements (CRISI) grant, totaling \$271 million.

Among many other competitive grant opportunities, the Authority has applied for nearly \$3 billion from the Federal-State Partnership for Intercity Passenger Rail Program. The Authority expects announcements of grants from this program to occur by the end of the calendar year.

#### PIVOTAL PROCUREMENTS

In August of this year, the Authority's Board of Directors approved the



issuance of a Request for Qualifications for the supply-maintain contract for its first [220 mph high-speed trainsets](#). This is the first of a two-step process. The second step will be the release of the Request for Proposals in the coming months.

Relatedly, the Authority is offering glimpses of [preliminary mock-ups of its trainset interiors](#). After months of community engagement, preliminary 3D modeling sketches and virtual simulation of the trainsets, including some refreshed looks at future high-speed rail stations in the Central Valley, have been released.

This work is part of ongoing stakeholder engagement, focus groups and community workshops that will continue to refine the designs in the months ahead as the Authority prepares to launch high-speed rail passenger service.

In November, the Board approved the release of a Request for Qualifications to industry for design services for the [Authority's track and overhead contact systems](#) for the initial 171-mile passenger service connecting Merced to Bakersfield.

Next year, the goal is for the Board to consider at least seven interrelated but separate contracts for release. These procurements will implement a strategy that incorporates lessons learned and updated industry input. The strategy includes smaller contracts, increased flexibility, and an emphasis on maximizing qualified bidder pools.

The contracts include both the design and construction of tracks and an overhead contact system. It also involves other systems like signaling, as well as support contracts like Independent Cost Estimator, Construction Manager, Integration Support, and Independent Safety Assessor.

In fact, with so many moving parts, the Authority also hosted an in-person Industry Awareness Day in November. Hundreds turned out for a wide-ranging briefing, including a project update from Authority CEO Brian Kelly. Specifics about phasing of a parallel procurement strategy, how to contract with the state, comply with the conflicts of interest policy, and how trainsets will be powered with behind-the-meter solar battery technology at traction power substations were also covered. [The presentation from the day](#) details these topics and more.

**GOOD PAYING SKILLED LABOR JOBS** Looking back at the beginning of 2023, the Authority hit a huge milestone early in the year with more than 10,000 construction jobs created since the start of high-speed rail construction. Most of these jobs have gone to Central Valley residents and people from disadvantaged communities.

That number is now 11,500, and climbing every single day, as hard-working people all over the Valley ply their invaluable trades to make high-speed rail real. This is







This landmark federal funding will specifically be used by the CAHSR Authority to:

- Procure six electric trains for testing and use for high-speed rail passenger service at speeds up to 220 mph;
- Construct the second track on the 119-mile high-speed rail from Madera to Poplar Avenue;
- Construct the Fresno Station; and,
- Complete final design and early works including right-of-way acquisition and utility relocation on the Merced and Bakersfield extensions beyond the 119-mile first construction segment.

Speaker Emerita Nancy Pelosi announced that the California High-Speed Rail Authority is set to receive \$3.07 billion in federal funding to support construction of a two-track electrified high-speed passenger rail line connecting the cities of Merced, Fresno (pictured above), and Bakersfield.

possible thanks to a recent average of 1,500 workers on job sites every day.

For Labor Day, the Authority celebrated [10 years of collaborative partnership](#) with the skilled tradesfolk of craft unions diligently working to make high-speed rail a reality. This partnership is possible thanks in part to the establishment of the Authority's Community Benefits Agreement, signed and executed in 2013. The agreement promotes employment and business opportunities during construction while advancing training opportunities to targeted and disadvantaged workers.

In September, the Authority recognized the [10th cohort of students](#) who completed the Central Valley Training Center's 12-week pre-apprenticeship program located in the city of Selma. Since the start of the training center in 2020, more than 150 students have graduated, with more than 1,000 inquiring about the program. The pre-apprenticeship training program is aimed at serving veterans, at-risk young adults, minority, and low-income populations in the Central Valley. The no-cost program provides hands-on construction industry training for those looking to work on the project. In looking ahead to when high-speed rail will be operational, the Authority [recently announced a historic agreement](#) with 13 rail labor unions that ensures the hard-earned gains in federal labor laws will be applicable to the operations of the nation's first high-speed rail project. An estimated 3,000 workers who will operate and maintain high-speed trains, facilities, and stations from the Bay Area through the Central Valley and into Southern California are covered by the agreement.

Closing the book on 2023, the next year promises more exciting advancements, as the Authority grows ever closer towards achieving America's first true 100 percent renewably powered high-speed rail system.



# HYDROGEN POWERED TRAINS

A PROMISING FUTURE FOR GREENER RAIL TRANSPORT

Contribution By: Martin Ritter, Charlotte Thalhammer and Kaden Killpack; Stadler USA.

To meet the climate targets, rail transport must also become more sustainable. Stadler has invested in green drive solutions to replace diesel fleets and has established its position as a leading provider of sustainable rail transport in recent years - both in Europe and the USA. SBCTA and Stadler unveiled what will become North America's first hydrogen-power train - the FLIRT H2. Stadler is the only manufacturer in North America that designs and builds rail vehicles compliant with the FRA AVT Crashworthiness Standards. The company is also one of very few original equipment manufacturers who has built a zero-emission multiple unit train powered by hydrogen fuel cell technology. This is the reason CAISTA and CalTrans selected Stadler to deliver the emission-free and innovative trains.

As the world continues its relentless pursuit of sustainable and eco-friendly alternatives, hydrogen has emerged as a promising fuel source for various industries, including transportation. Among the many applications, hydrogen-powered trains are gaining traction as an innovative solution to reduce carbon emissions and enhance the efficiency of rail transport.

## WHY HYDROGEN FOR TRAINS?

Typically, passenger trains are powered by diesel engines which emit greenhouse gases and contribute to air pollution. So far, the only alternative to this were electric passenger rail vehicles running under overhead catenary. Hydrogen, when used as a fuel, offers a clean and renewable alternative without the need to invest in electrification of full systems. In H2 trains, hydrogen fuel cells generate electricity through a chemical reaction between hydrogen and oxygen, producing only water and heat as byproducts. The generated electricity will charge onboard batteries, which provide power for the tractive effort, as well as auxiliary

loads for passenger comfort. This process eliminates harmful emissions, making it an environmentally friendly choice for powering trains.

## BENEFITS OF HYDROGEN-POWERED TRAINS

**Zero Emissions:** Hydrogen-powered trains produce zero emissions at the point of use, reducing the environmental impact of rail transportation.

**Energy Efficiency:** Hydrogen fuel cells are highly efficient, converting a significant portion of the chemical energy stored in hydrogen into electricity. Additionally like any battery powered vehicle, energy normally lost in braking efforts is recaptured within the batteries reducing overall energy loss. This can result in massively improved energy efficiency compared to traditional diesel engines.

## Reduced Noise Pollution:

Hydrogen trains are far quieter than their diesel counterparts, contributing to a more pleasant and less disruptive environment for both passengers and communities along the rail lines.

## Decentralized Energy Production:

Hydrogen can be produced from various renewable sources, promoting decentralization in energy production and reducing dependence on centralized power grids.

**Abundance:** Hydrogen is single handedly the most abundant element in the universe. In a world of finite resources, its primary constraint is not supply but refinement into a useable state, for which several governments are heavily investing.

## ECONOMIC VIABILITY OF HYDROGEN-POWERED TRAINS

The economic feasibility of hydrogen-powered trains is a crucial factor in their widespread adoption. While the initial costs of hydrogen fuel cell technology are relatively high, ongoing advancements and increased demand are expected to drive down prices. Additionally, the total cost of ownership may become more favorable over time, considering the potential for lower maintenance and operational costs compared to traditional diesel trains. The implementation of hydrogen passenger trains makes sense especially in areas where an existing hydrogen infrastructure is in





place or near hydrogen hubs. This eliminates the need for road transport of the hydrogen fuel making it less environmentally friendly. In addition, hydrogen as fuel for rail vehicles makes the most sense as part of a combined power source with batteries. With the state of current technology, it is a good fit for long, non-electrified routes where hydrogen fuels cells can serve as a range extender to the batteries on board, as H<sub>2</sub> fuels cells have a low constant power output to support the batteries state of charge at a much further range than battery power alone. As we see more state and governments require full conversion from Diesel and gas, the economic advantages will only grow as the cost of Hydrogen Trains is often far less costly than Overhead Contract Systems and system electrification.

#### CURRENT DEPLOYMENTS OF HYDROGEN TRAINS

Several Operators in the U.S. already leverage the advantage of Hydrogen Power for their bus services. The first hydrogen passenger train for the

U.S., the Stadler FLIRT H2 for SBCTA is scheduled to go into passenger service in 2024. In addition, the State of California has recently ordered four more hydrogen-powered rail vehicles from Stadler, which are planned for service on various routes throughout the state, with options for up to 25 additional vehicles.

#### WHAT'S NEXT FOR HYDROGEN-POWERED TRAINS?

The success of early deployments and ongoing research and development efforts suggest a promising future for hydrogen-powered trains. Manufacturers like Stadler are working on improving the efficiency and affordability of hydrogen fuel cell vehicle technology, while rail operators are exploring ways to integrate these eco-friendly trains into their fleets.

Governments and private entities are crucial players in driving the transition to hydrogen-powered trains. Subsidies, incentives, and regulatory support can play a pivotal role in making hydrogen technology

economically competitive and encouraging its adoption across the rail industry. Recently, the US Federal Government has taken steps to subsidize hydrogen production in an effort to improve air quality and decrease CO<sub>2</sub> emissions. Seven regional clean hydrogen hubs are expected to receive funding of around \$7 billion. The seven hubs catalyze more than \$40B in private investments.

In conclusion, hydrogen-powered multiple unit trains present a sustainable and efficient alternative to traditional diesel-powered locomotives. While challenges remain, ongoing advancements in technology, coupled with supportive policies, indicate a bright future for hydrogen in revolutionizing rail transport. As the world continues to prioritize environmentally friendly solutions, hydrogen-powered trains may very well play a significant role in shaping the future of sustainable transportation.



# AMTRAK'S NEW ERA OF PASSENGER RAIL

## SEIZING THE MOMENT

Contribution By: Andrew Horton

Bolstered by historic IIJA funding for intercity passenger rail, we're executing one of the largest capital programs in U.S. history, aiming to serve 60 million annual passengers by 2040. Amtrak's capital program is a collaborative effort with state and local governments, rail partners, and others to implement infrastructure, fleet, and station improvements. This journey includes approximately \$40 billion to enhance our national infrastructure network and \$11 billion to be invested in fleet and railcar upgrades. These generational investments show that we're no longer just a passenger rail operator. Today, Amtrak is also a major construction enterprise. We're employing world-class project delivery methods, including traditional and alternative project delivery, to execute an average of \$6.5 billion in capital investments annually. We've already started upgrading critical infrastructure, replacing our 20th-century fleet, and improving our stations and facilities. Here's a quick look at what's ahead:

We're advancing the Gateway Program along with the Gateway Development Commission and our regional partners to add needed resilience and double capacity on the most congested 10-mile

section of the Northeast Corridor (NEC), between Newark, NJ, and New York City. Gateway projects include building a new Hudson River Tunnel and the Portal North Bridge, replacing other aging infrastructure, and introducing new tracks and platforms at New York Penn Station. We're also advancing the replacement of the 150-year-old B&P tunnels with a new, safer Frederick Douglass Tunnel. This \$6 billion initiative will alleviate one of the biggest bottlenecks in the Northeast and help bring the average travel time between D.C. and Baltimore to under 30 minutes. We have awarded a Construction Manager at Risk contract for Construction Package B for this project. Other recent infrastructure milestones include the active procurements of additional NEC infrastructural rehabilitation and reinvestment projects, including the Susquehanna River Bridge, Connecticut River Bridge, and East River Tunnels, all of which will provide necessary structural and safety upgrades to help our trains run faster and keep our passengers safer on the rails.

In addition to infrastructure upgrades, we're replacing our

entire 20th century fleet with brand new technology and rolling stock. On the NEC, Acela passengers will be served by 28 new Avelia Liberty high-speed trains, replacing the 20+ year-old Acela fleet. This upgrade will boost the Acela's capacity by 25 percent and increase top route speeds to 160 mph. For Northeast Regional and State Supported services, we're working with Siemens to deliver 83 new Made in America Amtrak Airo trainsets. Amtrak Airo trains are scheduled to debut in 2026 and will elevate the customer journey with a focus on comfort and efficiency. We have also started initial work to purchase new long-distance trains that will upgrade and modernize vital services on 14 out of 15 overnight routes from coast to coast, replacing our existing long-distance fleet that have been serving our passengers for more than 40 years. To better serve our new fleet, we're investing \$1 billion over five years to modernize critical inspection and maintenance facilities in Boston, New York, Seattle, Washington D.C., and Philadelphia. Our new fleet and accommodation facilities will be crucial as we look to serve more locations and upgrade our service at current destinations.

A modern fleet also requires modern



stations. In 2021, we proudly unveiled our new home at Moynihan Train Hall in the heart of New York City. This world-class facility sets the standard for how we want our major stations to look and feel. In 2024, we're gearing up for the next chapter as we begin to initiate our Major Stations Program procurement, designed to create major station upgrades, address critical needs such as expanding station capacity, increase passenger flow, and introduce new customer amenities, create exciting retail opportunities, and foster equitable and sustainable growth for surrounding communities. Anticipate big transformations at key hubs including New York Penn Station, Baltimore Penn Station, and 30th St Station in Philadelphia. Our ambitious vision also extends to Chicago Union Station and Washington Union Station, promising sweeping improvements that

redefine the travel experience. Our commitment will be backed by a substantial investment of over \$7 billion over the next five years. By modernizing these vital rail hubs, we are steadfast in our mission to ensure they stand as beacons of innovation for the next century.

Making our stations accessible for all riders is also a major priority at Amtrak. Through our ADA Stations Program, we're renovating, repairing, and upgrading all Amtrak-responsible stations across the National Network to meet ADA compliance. In FY23, we completed ADA improvements at 16 stations. In FY24, we are investing a record \$220 million to upgrade 90 more stations, keeping us on track to bring 385 total stations across our network to 100 percent ADA Compliance Standards by 2029.

Our comprehensive investment strategy for the next two decades reflects a commitment to growth, modernization, and accessibility. We are taking steps to address critical infrastructure bottlenecks, build a modern fleet, increase station capacity, and create an accessible experience for all riders. We're creating a more connected and accessible future for passengers across, boosting U.S. economic activity, serving new communities, and reducing the nation's carbon footprint. Our journey toward 2040 is marked by bold initiatives, transformative projects, and a vision of a more connected future for passengers across the United States.

To learn more about Amtrak's projects visit: <https://www.amtrak.com/newera>



AMTRAK IS DELIVERING A NEW ERA OF RAIL. WE'RE MODERNIZING OUR FLEET, BRIDGES AND TUNNELS, STATIONS, AND OTHER INFRASTRUCTURE, WHILE REDEFINING THE CUSTOMER EXPERIENCE FOR THE MODERN ERA. THIS INVESTMENT IS MADE POSSIBLE THROUGH A COMBINATION OF FEDERAL PROGRAMS, INCLUDING THOSE FUNDED BY THE INFRASTRUCTURE INVESTMENT AND JOBS ACT, AS WELL AS AMTRAK'S ANNUAL GRANTS, STATE AND LOCAL PARTNERSHIPS, AND CUSTOMER REVENUE.



# BRIGHTLINE EAST UPDATE

## HIGH-SPEED RAIL'S IMPACT ON THE ECONOMY AND ENVIRONMENT

Contribution By: Ken Sislak

Brightline recently launched a new corridor linking Orlando and Miami with the fastest American trains outside the Northeast. The trains, with a 125-mph top speed, have already shown that Americans will ride fast, frequent, and reliable trains.

Brightline is a privately-owned and operated intercity passenger rail-road that operates between Miami and Orlando in Florida. The route is 235-miles (378 km) long. Part of the route runs on track owned and shared by the Florida East Coast Railway. Construction began in November 2014. Revenue service began in January 2018, initially between Fort Lauderdale and West Palm Beach. Service was extended

to Miami on May 19, 2018. The service was recently extended from West Palm Beach to Orlando International Airport (MCO) on September 22, 2023. Brightline plans to extend the route from Orlando to Tampa.

Brightline's maximum operating speed is 125 mph (200 km/h) on the segment between MCO and West Palm Beach. Scheduled running time between MCO and Miami is 3 hours and 25 minutes, with an average speed (including stops) of 69 mph (111 km/h). In comparison, the Amtrak Acela achieves an average speed of 90 mph (140 km/h) between Washington and New York, and an average speed of 66 mph (106 km/h) from New York to Boston. The average speed over the entire Acela route is 70.3 mph (113 km/h).

Ridership on Brightline has been growing. In its first partial year of operation in 2018 Brightline reported carrying about 579,000 passengers. In 2019 ridership increased 52 percent to 885,000 for the full year. Then the COVID pandemic hit all travel markets causing Brightline to be shut down in 2020

only resuming service in late 2021. For the partial year 2021, ridership was reported to be 159,474. In 2022, Brightline operated a full schedule between Miami and West Palm Beach and ridership grew to over 1.2 million passengers, a 35 percent increase over the pre-COVID year. Passenger revenue for the year was \$32 million or an average of about \$20 per ticket. On September 22, 2023, Brightline extended service to MCO from West Palm Beach allowing trips to be made from MCO to South Florida. Ridership during the opening days of September was encouraging. More than 17,578 passengers rode between Orlando and South Florida — paying an average fare of \$84. Brightline's total September ridership included 125,475 "short-distance riders," or those traveling only within South Florida. The total month's ridership of 143,053 was 56 percent higher than September 2022's mark of 91,577, which included only South Florida service. From September 22 to November 30, a total of 190,448 passengers rode the train between central and south Florida. In November, Brightline carried slightly more than 93,000 passengers from the Orlando Station.







The system's year-to-date ridership through the end of November was 1.8 million passengers from all their service. In 2024, their goal is to have 4 million travelers between Orlando and South Florida alone. Brightline boosted its service in October to 15 daily roundtrips between MCO and Miami and increased it again to 16 daily roundtrips in November to accommodate growing demand.

Yes, Virginia, there is a Santa Claus. And people will ride trains...



The Orlando International Airport Intermodal Terminal, also known as the Brightline Orlando Station and South Airport Intermodal Terminal, is an intermodal passenger transport hub located at Orlando International Airport in Orlando, Florida, USA.