

HIGH-SPEED INTERCITY PASSENGER RAIL

# ***SPEEDLINES***

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FEATURE ARTICLE

**High-Speed Rail in America Redux**

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Visit APTA link here for previous  
Issues referenced ☐

***CLEAR THE PLATFORM!***

***Supplemental Issue Arriving Soon***

A special update on the Corridor Identification and Development Grant Program is on its way. Stay tuned!

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Every year, thousands of people travel to Switzerland in all seasons to ride the scenic trains, such as the Glacier Express, the Bernina Express, and the Golden Pass Line, enjoying breathtaking views from their panoramic windows. In fact, nearly every journey through the country can be seen as a picturesque adventure.

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## HS&IPR Committee & Friends

# CHAIRMAN'S LETTER

## A MESSAGE FROM CHAD EDISON

We live in interesting times, especially for those of us involved in the high-speed and intercity passenger rail business. The most recent funding for passenger rail was part of the Infrastructure Investment and Jobs Act, which expires at the end of FY2026. Reauthorization discussions are expected to begin in earnest sometime this year with the new 119th Congress. With the advent of these reauthorization discussions, it is important for us to highlight the important role intercity passenger rail plays in economic development. Passenger rail connects rural communities with the specialized healthcare, employment and educational opportunities in larger metropolitan regions, increases employment and helps rebuild our domestic manufacturing capacity. We need to make the business case for continued investment in high-speed and intercity passenger rail.

The article "High-Speed Rail in America Redux" is a very high-level summary of high-speed rail development in the United States for the past 60-years. We have studied high-speed rail and have always concluded that it makes sense in several high-density travel corridors. After all the study, two corridors are under construction. The California High-Speed Rail Authority has 119 miles of active construction in the Central Valley with dozens of active construction sites. The first segment of the Los Angeles – San Francisco line would connect Merced to Bakersfield and commence service in about 2030. Brightline West officially broke ground on a high-speed rail line linking Las Vegas to Southern California in April 2024. Service is expected to be inaugurated in time for the 2028 Los Angeles Olympic games.

SPEEDLINES is planning to publish a special Supplement that highlights the significant progress being made in passenger rail investments across the country. The "Corridor Identification and Development Program (CIDP) Grant Update" Supplement will be filled with up-to-date information about the 69 projects that are in the Federal Railroad Administration (FRA) project development pipeline. The vast breadth and scope of the projects being advanced by project sponsors across the country is indicative of a very strong interest in improving the passenger rail network to support economic development and improve access to economic opportunities by connecting rural communities to large urban centers. Expanding the passenger rail system also can help reinvigorate the manufacturing sector. The Supplement will be designed to be a handy reference piece and a leave behind for visits to Statehouses and Capitol Hill.

Enjoy this edition of SPEEDLINES. We hope to see you at the Legislative Conference and our next High-Speed and Intercity Passenger Rail Committee meeting in Washington, DC in May.

Regards,

*Chad Edison*

**Chad Edison**  
Chair

# Memoriam

## *Albrecht "Al" Engel* (1946–2024)

With profound respect, we commemorate the life and contributions of our dear friend, Al Engel. Al Engel was a valued leader within the American Public Transportation Association (APTA), recognized for his unwavering dedication and strategic insights in the advancement of high-speed rail endeavors across the nation.

A graduate of Penn State University with a degree in Electrical Engineering, Mr. Engel obtained

several engineering certifications. His professional career commenced at General Electric, where he worked for ten years in various capacities within the Locomotive Department, including oversight of the domestic electric locomotive sector. He later worked for Gibbs and Hill and subsequently assumed the responsibilities of founding president and CEO of LS Transit Systems (LSTS), which was later acquired by SYSTRA to become SYSTRA USA. He later became the Vice President of High-Speed Rail at AECOM where he managed the Northeast Corridor Vision Study commissioned by Amtrak, which investigated the feasibility of enhancing top speeds beyond 150 mph with the objective of significantly decreasing Northeast Corridor travel times between Washington and Boston and improving train frequency. Al's commitment to collaborative efforts with Amtrak was evident early in his career. Amtrak hired Al into a key leadership position, thereby leaving an enduring impact on the Acela HSR rail program, the Avelia



Mr. Yoshio Ishida is Vice Chairman of the East Japan Railway Company (JR-East) and Al Engel at APTA High-Speed Rail Conference

*"I first met Al when I joined his Gibbs & Hill Transportation Division as a recently graduated engineer in 1982. I left the rail industry in 1985, but Al lured me back with the promise of an intriguing 8-hour consulting assignment for a newly formed Franco-American rail consultancy. That soon expanded to a week, then to a month and then to a lifetime in the rail and public transit industry. I will be forever grateful to Al for seeking me out and for his industry leadership in advocating for high-speed rail."*

Bill Lipfert, Arup





replacement fleet, and leading its nascent exploration of high-speed rail outside the Northeast Corridor.

He was instrumental in the formation of the High-Speed Ground Transportation Association during the 1990s, providing leadership and strategic foresight for more than a decade, culminating in its integration with APTA in 2005. He presided over APTA's High-Speed and Intercity Passenger Rail (HS&IPR) Committee, consistently advocating for increased appropriations for initiatives he considered beneficial to both communities and the environment. As a committed member of APTA, Mr. Engel served multiple terms on the Board of Directors and was an active contributor to the Business Members Board of Governors, the Authorization Task Force, and the Innovative Funding, Finance, P3, and Legislative committees, along with participation in several subcommittees. He was a co-founder, alongside Wendy Wenner, of the SPEEDLINES publication, which stands as a testament to his commitment to promoting high-speed rail discussions, which continues to flourish in tribute to him. Further, he was an influential voice at numerous APTA policy forums addressing high-speed rail and

*"Al was one to speak his mind and express his passion for High-Speed Rail. He was rarely intimidated but sought to learn from others. Al was professional, reliable, generous with his time and selfless in his service to the industry and his friends. We lost a great friend, but his contributions and legacy will continue."*

Jeff Wharton, SYSTRA

endorsed the 2008 California \$9.95 billion high-speed rail bond, which was subsequently ratified by the electorate.

With global HSR expertise, he played a crucial role in shaping a balanced transportation vision for the United States, fostering partnerships with states and other stakeholders to develop high-speed rail corridors, encompassing innovative projects in both California and Florida. Mr. Engel's expertise and counsel proved invaluable to Amtrak in realizing the HSR objectives established by the Obama Administration and navigating the legislative environment defined by the Passenger Rail Improvement and Investment Act of 2008 (PRIIA).

Beyond his professional achievements, Mr. Engel was regarded as a mentor, a source of inspiration, a devoted friend, and a compassionate individual with integrity who is profoundly missed by many both within and outside of the APTA family.

His dedication and commitment to advancing high-speed rail in the United States leaves a valuable legacy that is deeply cherished.



...Amongst many hobbies, Al found peace and relaxation in golfing and sailing.



## EUROPE

### PARIS-BERLIN HIGH-SPEED RAIL

The first direct high-speed rail link between Paris and Berlin was launched on Monday, December 16<sup>th</sup>. A German ICE train left Gare de l'Est station in Paris at 9:55 a.m. (0855 GMT) and was scheduled to arrive in Berlin Hauptbahnhof at about 6:00 p.m. later that day. The 1,100 km (683 miles) train trip takes just about eight hours. This is an average speed of 85 mph (137.5 km/h). The new daily train has station stops in Frankfurt, Karlsruhe and the French city of Strasbourg. The daily train provides convenience and some travel time savings over driving between the two cities and a competing overnight train service. The drive time is 11½ hours by car and 12½ hours by motorcoach. The ÖBB Nightjet overnight train between the two capitals, takes around 13 hours and 15 minutes and only

departs three times a week - on Tuesdays, Thursdays and Saturdays.

Flight time is 1 hour 40 minutes. However, total travel time by air includes ground travel to and from airports, check-in and security clearance and departure check-out. Travel from Charles De Gaulle Airport to Downtown Paris is one hour by car. And the travel time from Berlin Brandenburg to Downtown Berlin is 30 minutes. Add two hours for check-in and security screening and 30-minutes to pick-up checked luggage and get to ground transportation after arrival. Total travel time flying is 5 hours 40 minutes.



## CANADA

### TORONTO-QUEBEC CITY HIGH-SPEED RAIL

On October 28, 2024, the Canadian government approved plans to build a high-speed rail line from Toronto to Quebec City with stops in Ottawa and Montreal. Proponents of the project hope the train will take passengers from Montreal to Toronto in three hours. By car, it takes about five and a half hours to travel between the two cities.

The proposed high-speed train would use a newly built, separate electrified track and run frequently. In addition to Quebec City, Montreal and Toronto, it would serve Trois-Rivières, Laval, Ottawa and Peterborough. Transport Canada initially estimated that the cost of a high-speed rail link between the two cities could be as high as \$80 billion.

Pierre Barrieau, a lecturer in transportation planning at the Université de Montréal and consultant with

the firm Gris Orange, said a high-speed rail link between these cities could help pay for itself by eliminating the need to build new and expanded highways and airports.

The Canadian government had previously decided to build what it called a “high-frequency” (HFR) rail corridor with stops in Toronto, Peterborough, Ottawa, Montreal, Trois-Rivières, Laval and Quebec City.

See story in SPEEDLINES Issue 36. VIA HFR Inc., the Crown corporation created in November 2022 to develop a high-frequency rail corridor between Quebec City and Toronto, is expected to change its name to refer to more than just high-frequency trains.

## VIETNAM

### HANOI-HO CHI MINH CITY (FORMERLY SAIGON) HIGH-SPEED RAIL

Vietnam’s National Assembly has approved the construction of a 957-mile (1,540 km) high-speed railway linking Hanoi in the north to Ho Chi Minh City in the south. This \$67 billion transformative project aims to reduce travel time between the two major cities from 30 hours to just five.

The ambitious high-speed rail line will feature trains capable of speeds up to 217 mph (350 km/h), passing through 20 provinces and cities. With 23 passenger stations and five freight stations, the line is designed to serve both transportation and defense needs, according to state media reports.

Construction is set to begin in 2027, with the first trains expected to start operating by 2035. However, Vietnam’s track record of delays in major infrastructure projects has raised concerns about meeting these ambitious deadlines. Vietnam is planning to prioritize domestic funding sources for the project, though foreign loans may be considered if they are deemed affordable and come without restrictive conditions.



### SAWTOOTH BRIDGES REPLACEMENT



Amtrak has awarded pre-construction and management contracts for its Sawtooth Bridges replacement project in New Jersey. Skanska, a Walsh and Herzog joint venture, will conduct pre-construction activities, and Sawtooth Partners, a joint venture of STV and AECOM, will provide project and construction management services.

Originally constructed in 1907, the Sawtooth Bridges currently support more than 400 daily trains operated by Amtrak and New Jersey Transit on the Northeast Corridor. The replacement includes the construction of three new bridges along a 1.9-mile corridor in Kearny, New Jersey, between Newark Penn Station and Secaucus Junction, STV officials said in a press release. The Sawtooth Bridges replacement project is part of the larger Gateway Program, an ongoing investment effort to improve railroad reliability and capacity along the Northeast Corridor.

The replacement bridges will double the current track capacity on the most congested 10-mile section of the Northeast Corridor, allowing for train speeds to be increased from 60 miles per hour to 90 miles per hour, and improving reliability. The replacements will be delivered in multiple phases.

### NEW HAVEN-PROVIDENCE CAPACITY PLANNING STUDY

Amtrak's New Haven to Providence Capacity Planning Study (CPS) will develop and evaluate opportunities to grow rail capacity and improve rail performance along the Northeast Corridor (NEC) between New Haven, CT and Providence, RI, while minimizing impact to both the natural and human built environments.

The New Haven to Providence CPS will support Amtrak's strategy for long-term mobility and economic development in New England, while being mindful of critical historical, resiliency, and community development issues. Beginning in 2025, we will kick off the CPS community engagement process, to meet with relevant stakeholders, residents, and businesses.

For 18-24 months following the kick-off in early 2025, the New Haven to Providence CPS will focus on the following key activities:

- Conduct a robust and inclusive public outreach effort to understand the needs of local communities.
- Identify and evaluate rail alignment alternatives.
- Complete the initial design work necessary to define the capital investment needed in this section of the NEC.

Upon conclusion, a Final Report will be prepared with the results of public outreach and community engagement; the Alternatives Analysis of potential rail alignment, infrastructure, and operational options between New Haven and Providence; and next steps. The implementation of infrastructure improvements identified through this process will be subject to additional planning, design, and environmental permitting activities.

Stay tuned for the launch of the New Haven to Providence CPS project specific website, coming to [AmtrakNewEra.com](https://AmtrakNewEra.com) in early 2025!



# IN THE SPOTLIGHT

## YOU SHOULD GET TO KNOW US



**IAN CHAUDRI**

**Chief Executive Office, California High-Speed Rail Authority**

This is a once-in-a-lifetime project that has the attention of the nation. My vision includes making California high-speed rail the first segment of a high-speed rail network in the Southwest. I look forward to joining the ranks of dedicated employees at the Authority, rolling up my sleeves and working collectively to make our mark on high-speed rail in California and the Nation.



**RON PATE**

**Program Administrator, Cascadia High-Speed Rail and I-5 Program at the Washington State Department of Transportation**

Congestion on our roads and freeways is creating a demand for travel by passenger train. We have an opportunity to get on the right track. As part of a multimodal transportation system, passenger rail provides regional mobility options, connects people to career opportunities, and fosters economic growth.



**CHRIS KOPP, AICP CTP**

**Vice President, Intercity Passenger Rail Planning Lead, HNTB Corporation**

The FRA Corridor ID program is an unprecedented opportunity to create a pipeline of passenger rail projects through service development planning studies. The next two years will be a pivotal time for states and communities to determine what they need from the next surface transportation reauthorization bill to realize their passenger rail investment priorities. Let's meet the moment!



**DIANE COWIN**

**Senior Vice President, Global Transit/Rail Market Lead – Americas, AECOM**

With Acela, California High-Speed Rail, Cascadia High-Speed Rail, Brightline Florida and Brightline West, Texas High-Speed Rail between Dallas and Houston, and many more high-speed and intercity rail projects across the US under study, the industry is poised for a renaissance. A renewed focus on customer experience, interoperability, and sustainability has passenger rail at the center of the future of transportation.





# AMTRAK RESTORES WEEKDAY TRAIN SERVICE

## BETWEEN HARRISBURG AND LANCASTER IN TIME FOR THE THANKSGIVING HOLIDAY

Contributed by: [Martyn Griffen, Amtrak](#)

In November, Amtrak, PennDOT, and their partners celebrated the landmark Harrisburg Line Track Renewal Project, a major track maintenance undertaking that involved replacing 70+ year-old rail infrastructure, leading to improved customer ride quality and service reliability. Amtrak invested \$122 million for this state of good repair (SOGR) project. The Track Renewal Project had an original timeline of two years, but the partners worked on an accelerated schedule to replace the rail infrastructure, completing the work in eight months. This brought full restoration of weekday service on the Keystone Service route, which was completed ahead of schedule and under budget.

This successful project was the result of strong collaboration between Amtrak, PennDOT, and Norfolk Southern, the primary freight carrier operating in the region. Amtrak partnered with PennDOT to preserve ridership and Norfolk Southern and other freight suppliers who transport raw materials and finished products on the corridor. Innovative project scheduling enabled Amtrak to maintain morning and evening trains between Harrisburg and eastern Pennsylvania. During construction, Amtrak provided connecting bus service at all affected stations and preserved the midday Pennsylvanian train service, which operates daily between Pittsburgh, PA and New York, NY.

The project consisted of replacing wood ties with concrete ties along 43 track miles, and cleaning and replacing 226,500 feet of gravel track bed (ballast) to support the track structure and improve drainage. The project installed 113,000 concrete rail ties, which have an expected lifespan of 60 years compared to a 25-year lifespan for traditional wood ties. By replacing existing wood ties with concrete ties, this project will reduce maintenance frequency and life cycle costs. Completion of this weekday service restoration will enhance customer experience and comfort and increase service reliability.

More than 200 workers supported this project and Amtrak's in-house construction team achieved major efficiency improvements compared with previous years, while continuing to maintain a high safety standard. According to Laura Mason, Amtrak's Executive Vice President of Capital Delivery, Amtrak's in-house construction crews increased production by 87% compared to 2023. The increase in productivity was

directly related to providing crews with additional time to work on the track and work during daylight shifts. Amtrak increased active work time by more than 90%, which minimized customer impact and maximized work performed during each shift.

The service restoration comes as Amtrak was awarded a Fed-State Partnership Program grant for the Zoo to Paoli Electrification Transmission Line Program, which will upgrade the electrification system along an 18-mile section of track between the Zoo Substation in Philadelphia and the Paoli Substation in Chester County, PA. Completion of the Zoo Substation will improve reliability and efficiency along this route.

The Electrification Transmission Line Program will involve coordinating with PennDOT and SEPTA, restoring all overhead wire and catenary poles to a state-of-good-repair. This Zoo to Paoli electric upgrade was one of 13 Amtrak-led projects that received a competitive grant through the FRA's Federal-State Partnership for Intercity Passenger Rail Program (FSP-NEC). Completion of this project will restore all overhead wire and catenary poles to a state of good repair, in what is Amtrak's longest distance between power substations along the New York-Washington-Harrisburg Corridor.

The Zoo to Paoli Electrification Transmission Line Program and Harrisburg Line Track Renewal Project are part of Amtrak's broader goal of delivering quality service to its riders and partners. In a year of record ridership, Amtrak continues to pursue major projects and innovate on its delivery methods to ensure work is completed efficiently and effectively.



# LONG DISTANCE FLEET REPLACEMENT IN NORTH AMERICA

Contributed by: [SPEEDLINES Staff](#)

## AMTRAK

As reported in **SPEEDLINES Issue 40**, Amtrak is planning to renew its entire fleet of long-distance train rolling stock. The procurement program involves replacing the entire 765-car long-distance fleet over four phases, with the first phase replacing nearly 600 bi-level cars with up to \$7 billion of Amtrak's 2021 Infrastructure Investment and Jobs Act funding. Amtrak seems to have decided that they will keep the Eastern fleet as single-level equipment and the Western fleet as bi-levels. The new Western long-distance trains will be modeled after the successful Superliner car style with an upper and lower deck.

Amtrak is in the process of identifying car builders for the first phase of the Long-Distance Fleet Replacement Program—intended to replace equipment on 9 of 15 long distance routes. In December 2023, Amtrak released a Request for Proposal (RFP) to potential manufacturers of the new equipment. The RFP was very prescriptive and detailed. It was over 1,000 pages in length. Amtrak's initial requirements for designs and amenities for its planned procurement of new long-distance trains complicated the procurement program and led to delays in its early stages, according to an Amtrak Office of Inspector General (OIG) report issued on December 13, 2024. The OIG said it found that Amtrak's technical requirements and a delay in incorporating feedback from train manufacturers resulted a seven-month delay.

Early challenges in developing design requirements for the trainsets, however, have delayed the schedule. For example, Amtrak addressed accessibility by allowing wheelchair users to access the upper level on an elevator. Once they are on the upper deck, they can

access all public areas via 32-inch aisles and 40-inch open gangways between cars.

Amtrak sent requests for information to car builders in December 2022 and July 2023, inquiring about experience with manufacturing bilevel coaches, sleepers, and food service cars; the number of car types that could be manufactured at one time; and experience building elevators on rail cars. None of the carbuilders reported having any experience producing elevators inside the trains. The requirement remains a key feature of the new car design. One car builder said it could produce each of the car types, but that delivering cars as a trainset would lead to capacity constraints and program delays. After receiving more car builder feedback, Amtrak in June 2024 amended its requirements in the RFP to reduce complexity and increase car builders' flexibility. Amtrak now plans to ask builders to submit proposals for trainsets with fewer car types and will include the option to deliver individual cars that could be intermixed with the existing fleet, rather than an entire trainset.

The OIG offered recommendations, which were accepted by Amtrak, for strengthening components of the procurement program management framework, including a review and clarification of stakeholder roles, responsibilities and authority for each stage of the program; filling senior management and program team vacancies; and updating the program's risk register.

The full OIG report can be downloaded [here](#).



# VIA RAIL LONG-DISTANCE FLEET REPLACEMENT

Via Rail has issued Requests for Qualification for locomotives and passenger cars as part of its process to select a supplier for its new fleet. The replacement fleet program consists of more than 40 locomotives and 313 railcars. This marks the first phase of Via Rail's project to replace all its long-distance passenger trains across the country. Via Rail will issue a Request for Proposals from qualified carbuilders with the goal of awarding the contract at the start of 2026. From there, it will take eight to 10 years to replace the fleet, with the first new railcars being delivered in 2029-30 with the fleet replacement program reaching completion in 2034-35. Many of the existing long-distance fleet's 210 iconic Budd-built railcars were built between 1946 and 1955 and are becoming difficult and costly to maintain.

The new Canadian passenger rail fleet will feature nine different types of railcars and offer enhanced comfort and modern amenities, including sleeper, accessible sleeper, couchette, dining, panoramic and dome cars. The dining cars will have a full kitchen so chefs can prepare meals using fresh local ingredients, while the panorama cars and a new version of the famous dome cars would allow passengers to admire the scenery, flora and fauna from their seats. The railcars will be built specifically to provide 'unparalleled accessibility and comfort'. The rolling stock will be designed to withstand Canada's cold winters, hot summers and vast distances, including the Toronto to Vancouver train, The Canadian. The diesel locomotives will exceed EPA Tier 4 emission standards and be designed with a goal to transitioning to zero-emission technologies in the future.



This new investment is part of the 2024 federal budget and builds on 2018 funding that allowed Via Rail to replace its Québec City-Windsor Corridor fleet with Siemens Venture trainsets. The Venture trainsets use the Siemens Charger locomotives, which are equipped with a propulsion system powered by a fuel-efficient Cummins QSK95, 16-cylinder diesel engine providing 4200 hp. The diesel engine feeds an alternator and the IGBT traction converters, which provide single axle control for operation of up to 125 mph (200 km/h) while meeting the latest EPA (Environmental Protection Agency) Tier 4 emission standards.







# RAIL TRAVEL IN SWITZERLAND INTEGRATED TRANSPORTATION DONE RIGHT!

Contributed by: David Wilcock, VHB

The Swiss National railway network is an impressive array of commuter, intercity and long-distance trains connecting the many cities, towns and villages in Switzerland as well as to the rest of Europe. It is a fairly dense network with frequent service along all the lines. Perhaps the most impressive part of the system is the full integration between modes and the coordination with the many service passenger rail service providers.

My wife and I, and another couple, recently had the opportunity to take a two-week vacation in Switzerland. FYI – if you haven't been, it is a gorgeous country that you should visit. The mountains and countryside are breathtaking. One aspect that drew our attention was that over the two-week period, we saw no trash.

There was no trash on the streets, no trash along the rail rights-of-way, and no overflowing trash bins. The country was spotless. As a transportation professional however, I cannot help but assess the passenger rail and transit services and how they operate. We booked a circle rail tour of Switzerland which we actually started in London so we could take the Eurostar through the Chunnel to Paris and then TGV Lyria from Paris to Zurich. From Zurich we did a rail tour to St. Moritz, Zermatt, Montreux, Luzern and back to Zurich. We rode many trains and used public transportation throughout the course of our visit. It was a flawless journey from a transportation perspective.

I'll start in London where we rode the Tube from



Heathrow Airport to Kings Cross/St. Pancras Station. We also used the Tube to tour around London. It was easy to navigate; just tap your credit card on the fare gate and go. No need to buy an Oyster Card or be concerned with running up the fare as the Transport Authority has a daily fare cap. Next up are the rides on Eurostar and the TGV Lyria. It can be summed up in one word – awesome! These were the first two truly high-speed trains I have had the opportunity to ride. The Eurostar maxed out at about 275 to 280 km/hr (170 to 175 mph). It was a super smooth trip; you did not feel like you were going that fast and everything stayed in place on the table in front of you. I didn't try it, but I am willing to bet that a glass would have stayed on the table without moving over the 212 mile trip which took about 2 hours 30 minutes. In Paris, we simply bought a one-way ticket on the RER to travel three stops from Gare Nord to Gare de Lyon. It took a minute to figure out where to buy the tickets but again no need for a special fare card. The TGV Lyria was equally impressive on its 302-mile run from Paris to Zurich which took about 4 hours. The TGV topped out at about 315 to 320 km/hr (195 to 200 mph). Again, the ride was as smooth as silk.

The Zurich Train Station impressed me; it handles over 2,000 trains a day on 26 tracks (16 at grade and 10 underground of which eight are through running tracks). The station is consistently busy all day long. The train board is huge; the picture shown below was taken at 10 AM when it listed 60 train departures and that only covered 40 minutes! For its size, Swiss

Rail makes it easy to navigate and you never feel surrounded by people. Perhaps even more impressive was the network of trolley buses, trams, and electric buses that greeted you as you walked out the main entrance of the station. I saw my first double articulated trolley bus in Zurich and not just one – they operated a whole fleet on several different lines. The buses and trams operated frequently; the waits were short between runs. Every city we visited with the exception of Zermatt, which is a carless city, had an extensive bus and/or tram system. Perhaps even more remarkable was the over the road bus connections that met the trains at various stations throughout the system. These bright yellow buses were easy to find and the schedules were coordinated between the buses and trains. We had purchased 10-day Swiss Rail passes which allowed us to have unlimited use of the trains as well as all public transportation modes (buses, trams, ferries) in all the cities we visited. How's that for seamless connectivity!

My impressions of the Swiss rail operations were quite positive. First of all, the entire system is electrified; no noisy diesel locomotives rumbling along the tracks. Secondly, there are multiple operators of the trains but other than the equipment being different colors, you would not know. It was one seamless rail operation. The trains were clean inside and out and were in proper working order. Every train we rode was on time; they left on time and they arrived on time. Their crews are disciplined and sharp; there is no slack in the operation. One crew member I spoke to said that the crews are respectful of each other and their jobs. He told me that





railroad workers are subject to personal fines if they fail to do their jobs properly (I wonder what some US labor unions would think). I noticed that we traveled over a fair amount of single-track main line with passing sidings. Many of the sidings were at stations so there was a platform for each direction of travel. Each meet seemed to happen crisply as planned; there were no long delays or late trains. At all the rail stations the electronic train displays included the train number, departure time, platform number and the full layout of the train. The layout was a diagram that showed the number of coaches, which were 1st class, 2nd class etc, boarding location on the platform (A, B, C, D etc) and the direction of travel. The SBB rail app was equally impressive as it showed all of this information as well. If you had a connecting train, it showed all the same information for the connection including a walking path to the connecting train platform! Every coach had an electronic display by the door that provided train number, next stop and destination of the train (and coach number for reserved seat trains). On board each coach had an electronic display with train information including a list of all the stops and they tracked your progress so you knew where you were. I noticed that all the coaches had an automatic bridge plate that deployed when the doors opened filling the gap between the train and the platform.

My final impression was on the day we left Zurich to fly back to Boston. We went to the Zurich Train Station, bought tickets for the airport train, went downstairs to our designated platform and boarding location, and took a quick 10-minute trip to the airport. Train frequency was about every 10 minutes throughout the day (and these were long trains). When we arrived at the airport, we found that the rail station was under

the main terminal building. We just had to go upstairs and we were in the check-in area! No shuttle buses, people movers or long walks. What a way to conclude a truly integrated transportation experience!

One final thought on what was a terrific journey. The Swiss rail system was the model for the 2018 California State Rail Plan, which stressed an integrated system using the HSR line as the backbone of the system. Imagine if we duplicated this approach in the parts of the United States with robust rail services. Think what could be done on the Northeast Corridor, the Midwest Rail network and in the Mid-Atlantic/Southeast as that system comes to fruition. The possibilities are limitless!





# HIGH-SPEED RAIL IN AMERICA REDUX

Contributed by: Ken Sislak (AECOM) Publisher, SPEEDLINES

As Japan celebrated the 60<sup>th</sup> anniversary of the opening of the Tokaido *Shinkansen* with a commemorative ceremony at Tokyo Station this past October 1, many people in the United States were left wondering why it is taking so long to build a high-speed rail line here. Congressional interest in high-speed rail dates to 1965 when Congress passed the High-Speed Ground Transportation (HSGT) Act just one year after the Tokaido *Shinkansen* opened, which ushered in a new era of passenger train development around the world, but not here. The United States has adopted a more careful, measured, and traditional approach to the development of high-speed rail. Let's take a look at the developments in high-speed rail in the United States, compared to other countries, and understand why it is taking so long to revolutionize the way we travel between cities here.

## BACKGROUND AND HISTORY

The HSGT Act authorized \$90 million to start a Federal effort to develop and demonstrate contemporary and advanced HSGT technologies. Under the HSGT Act, the Federal Railroad Administration (FRA), in partnership with the Pennsylvania Railroad (later Penn Central) and manufacturers, introduced Metroliner trainsets on the Northeast Corridor (NEC) between New York City and Washington, D.C. in 1969. The Metroliner was the first high-speed rail service in the United States. Turbo trains were also introduced in 1969 along the New York City – Boston segment of the NEC under Penn Central operation. Amtrak took over the operation of the Metroliners and Turbo trains in 1971. The Turbo trains were removed from service between New York and Boston by Amtrak in 1976 and were disposed of in 1980. The original Metroliner cars were withdrawn from service by the late 1980s as Amtrak moved to locomotive hauled trains, but the Metroliner brand endured until 2006 and replaced by the current Acela brand. See **SPEEDLINES Issue 25**; and **SPEEDLINES Issue 26** for anniversary stories on the Metroliners and Turbo trains.

The Budd Metroliner was designed to have a top speed of 150 mph (240 km/h). However, track conditions and

electrical issues limited the top speed to 120 mph (190 km/h). FRA instituted the NEC Improvement Program, which addressed some of the track and overhead contact and power distribution problems. Today, Acela trains can reach speeds up to 150 mph (240 km/h) on segments of the NEC. Amtrak has purchased new high-speed Avelia Liberty trainsets to replace the Acela trainsets. The new Avelia Liberty trainsets will be placed into revenue service sometime in 2025. The maximum speed of Amtrak's Avelia Liberty trains on the NEC is 160 mph (260 km/h). The trains are designed to operate at speeds up to 220 mph (350 km/h) with the tilting mechanism engaged. Many high-speed trains operating today in other countries regularly operate at speeds up to 220 mph.

Where does high-speed rail make economic sense? There is an adage from steam railroading days that speed burns money. High-speed rail is very costly to build, operate and maintain. High-speed rail lines need to be cost-effective and generate benefits that outweigh the costs of building them otherwise they become boondoggles that benefit nobody and are costly to the economy.

# HIGH-SPEED GROUND TRANSPORTATION FOR AMERICA

So, where can high-speed rail lines be built in the United States that make economic sense and provide transportation utility? Congress weighed in on the answer to this question when it passed the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). The act presented an overall intermodal approach to highway and public transportation funding. It listed “high priority” highway corridors and called for the designation of up to five high-speed rail corridors. The options were studied for several month and announced in October 1992. The five high-speed rail corridors called for in ISTEA included:

- Midwest corridor linking Chicago with Detroit, St. Louis, and Milwaukee.
- Florida corridor linking Miami with Orlando and Tampa.
- California corridor linking San Diego and Los Angeles with the Bay Area and Sacramento via the San Joaquin Valley.
- Southeast corridor connecting Charlotte, Richmond, and Washington, D.C.
- Pacific Northwest corridor linking Eugene and Portland with Seattle and Vancouver, BC, Canada.

Since then, a lot of study has been devoted to these corridors and others starting in 1997 with the Congressionally mandated feasibility study entitled, *High-Speed Ground Transportation for America*. The report prepared for the FRA by a team of consultants examined the economics of bringing HSGT to highly populated groups of cities throughout the United States. The intention was to examine the likely investment needs, operating performance, and economic benefits of HSGT in a set of illustrative corridors in several regions centered on the designated high-speed rail corridors. The report concluded that several corridors were ripe for high-speed rail development and several

other corridors would be better served by investing in higher speed services (Accelerail, was the term coined by FRA) using existing freight rail lines. The high-speed rail corridors included San Francisco – Los Angeles; Dallas – Houston and the Northeast Corridor linking Boston – New York – Washington, DC. The report concluded that Accelerail would be more cost effective for the Chicago Hub network, the Cascades Corridor in the Pacific Northwest and the Empire Corridor in New York.

Since the 1997 Congressional Feasibility Study was released, investment in passenger rail corridors in the United States has tracked with the study conclusions. The California high-speed rail system is being designed and constructed to the 220-mph high-speed rail standard as is the Brightline West line connecting Las Vegas to Victorville in suburban Los Angeles. The Texas Central project, now being managed by Amtrak, is being planned for *Shinkansen* trains that can operate at speeds up to 200-mph. Amtrak is investing in new trainsets and infrastructure improvements in the NEC to speed up the line and cut travel times.

So-called Accelerail investments have been made to increase maximum authorized speed up to 110 mph (175 km/h) in several corridors: Harrisburg – Philadelphia Keystone Corridor, Albany – New York City Empire Corridor, and the Chicago Hub, notably the Chicago – St. Louis and Chicago – Detroit corridors. Brightline Florida invested in a new passenger rail service connecting Miami – West Palm Beach and Orlando with maximum authorized speeds up to 110 mph on the shared use line segment between Miami and Cocoa Beach and 125 mph (200 km/h) on the exclusive right-of-way between Cocoa Beach and Orlando.

# VISION FOR HIGH-SPEED RAIL IN AMERICA

The Transportation Equity Act for the 21st Century (TEA-21) was passed in 1998. Congress continued to designate high-speed rail corridors. Section 1103 (c) authorized six additional corridor designations, for a total of eleven, as well as the extension of other previously designated high-speed rail corridors. Ten years later the Congress passed the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), establishing the initial framework for the development of the Congressionally designated high-speed rail corridors. Using the framework established by PRIIA, the American Recovery and Reinvestment Act of 2009 (ARRA) allocated \$8 billion to be granted to states for intercity rail projects, giving priority to projects that support the development of high-speed intercity rail in alignment with the 1997 Congressional Feasibility Study. President Obama announced his vision for developing high-speed intercity passenger rail in

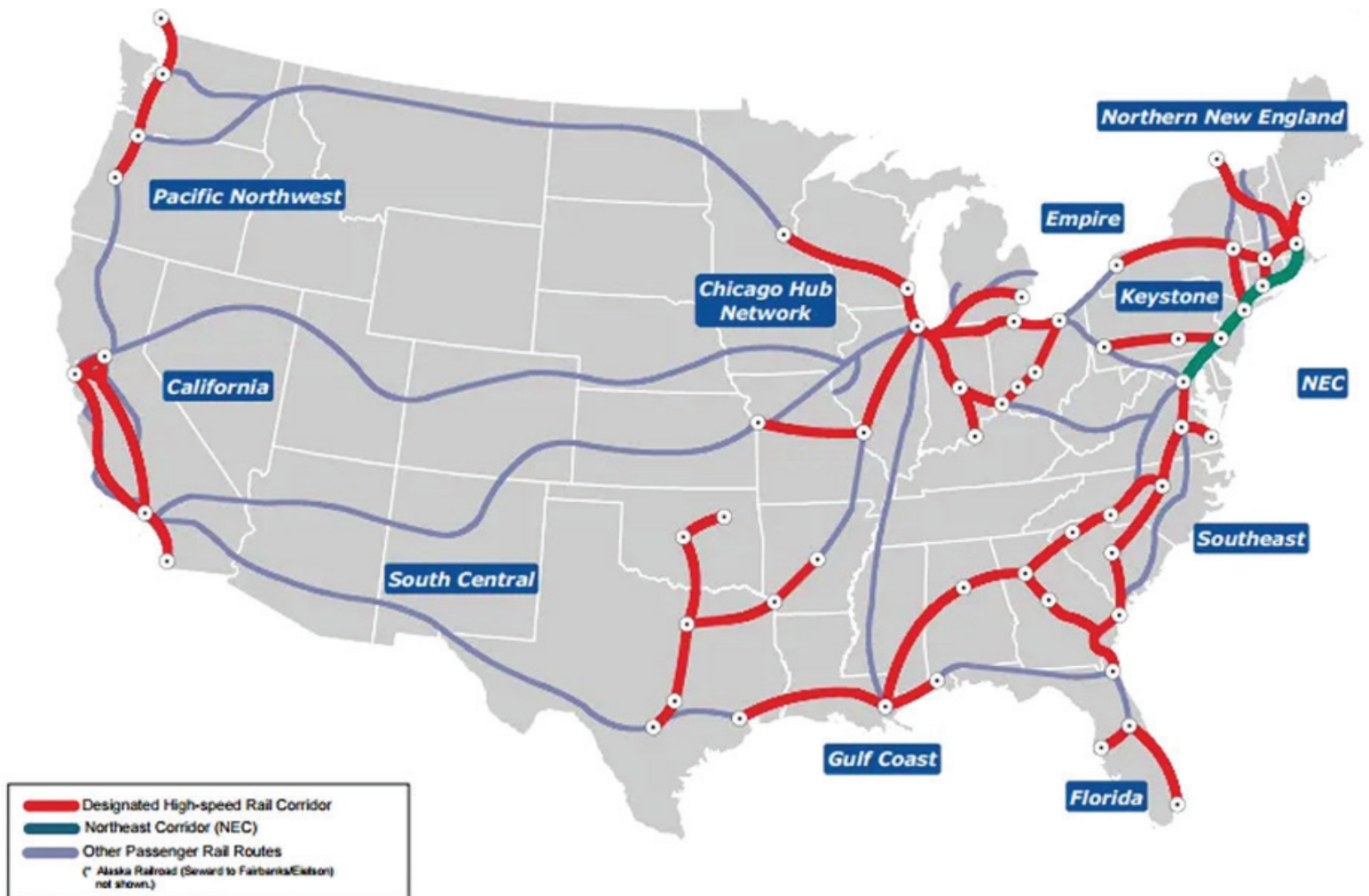
America. Shortly thereafter, FRA released the **High-Speed Rail Strategic Plan**.

There were more than 60 ARRA grants funding projects across the country, including significant corridor investments in California, Illinois, Michigan, Northeast Corridor, North Carolina, Washington, and Oregon. Florida, Ohio and Wisconsin refused the FRA grant awards. To learn more about the timeline of high-speed rail development in the United States, please refer to the **FRA High-Speed Rail Timeline** website that details the legislative history.

## AMERICA 2050

Interest in high-speed rail has been growing in the United States and was piqued by several studies prepared by America 2050 in the early 2000s. America 2050 is the Regional Plan Association's national infrastructure

### *Congressionally Designated High-Speed Rail Corridors*





planning and policy program. The program focuses on a broad range of transportation, sustainability, and economic-development issues impacting America's growth in the 21st century. A major focus of America 2050 was the emergence of megaregions - large agglomerations of metropolitan areas, where most of the population growth by mid-century is predicted to take place. Megaregions are comprised of multiple, adjacent metropolitan areas connected by overlapping business travel and commuting patterns, watersheds and linked economies and social networks. America 2050 identified 11 megaregions in the United States as depicted in the map above.

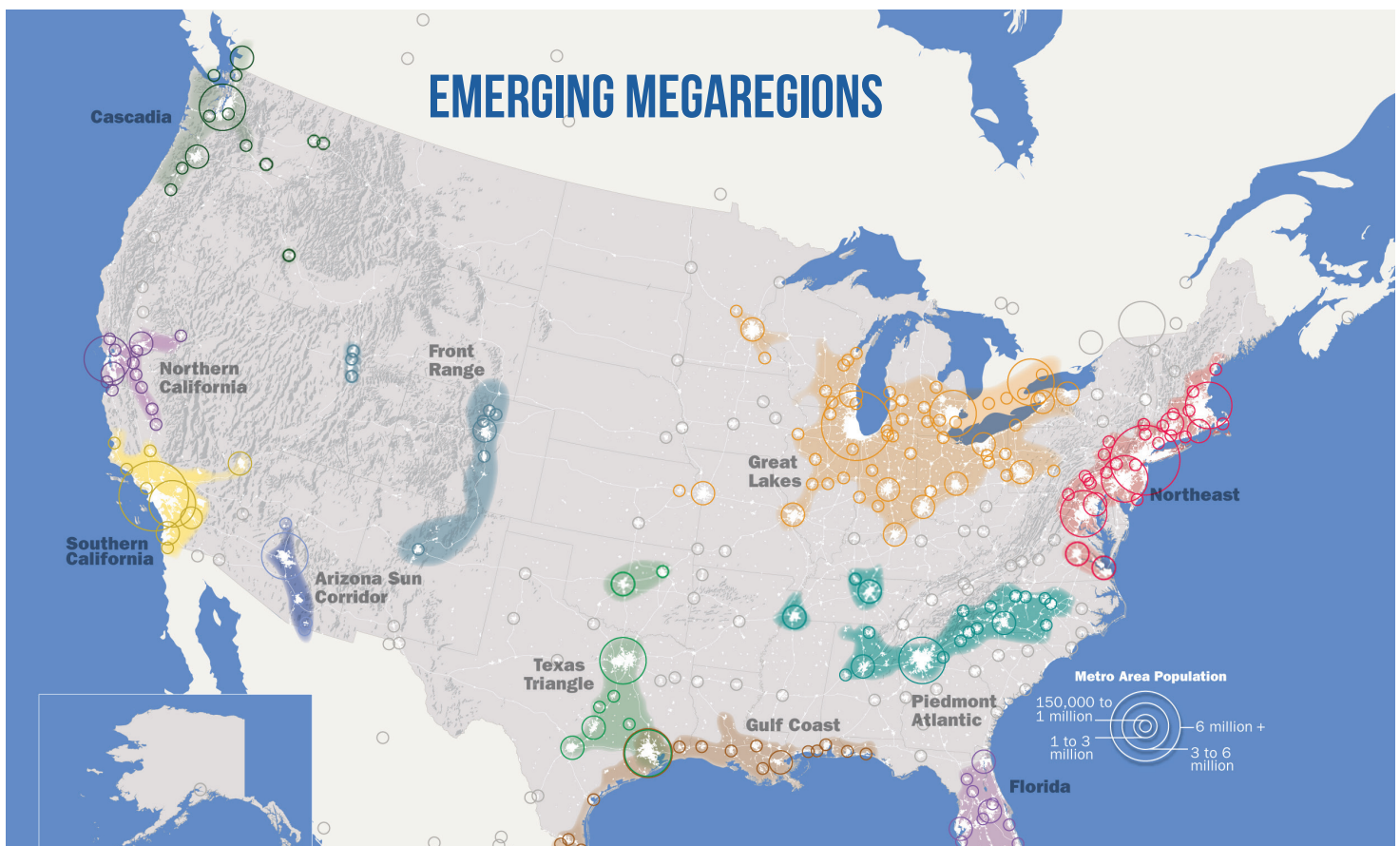
In 2009 America 2050 published a report entitled, *Where High-Speed Rail Works Best*, which analyzed 27,000 potential corridors or "city pairs" and ranked them according to a weighted average of six criteria. The criteria were:

- City and metropolitan area population, favoring cities with larger populations in large metropolitan areas.

- Distance between city pairs, confined to distances between 100-500 miles, with 250 miles receiving the highest value.
- Metropolitan regions with existing transit systems including regional rail, commuter rail and local transit networks.
- Metropolitan GDP, awarding value based on the combined per-capita GDP.
- Metropolitan regions with high levels of auto congestion as measured by the Texas Transportation Institute's Travel Time Index.
- Metropolitan regions that are located within a megaregion.

The top 50 city pairs identified were primarily concentrated in California, the Northeast, and the Midwest. Not surprisingly, the four largest cities in America (Los Angeles, New York, Chicago and Houston) were prominent anchors of the corridors. The report did

### Emerging Megaregions



Source: America 2050; Regional Plan Association

not consider alignments in the corridors or the cities in between each pairing.

As a follow-up to the 2009 report, America 2050 prepared a report on high-speed rail and developed recommendations on how national investments should be focused on corridors with the greatest demand for ridership in each of the nation's megaregions. The study, entitled *High-Speed Rail in America*, cited ridership potential as the number one factor in determining whether a corridor is suitable for investment, identified the specific conditions that generate ridership demand, and scored each corridor according to strength in those areas. The rail corridors were mapped by and included an integrated network of conventional passenger rail and connecting bus services.

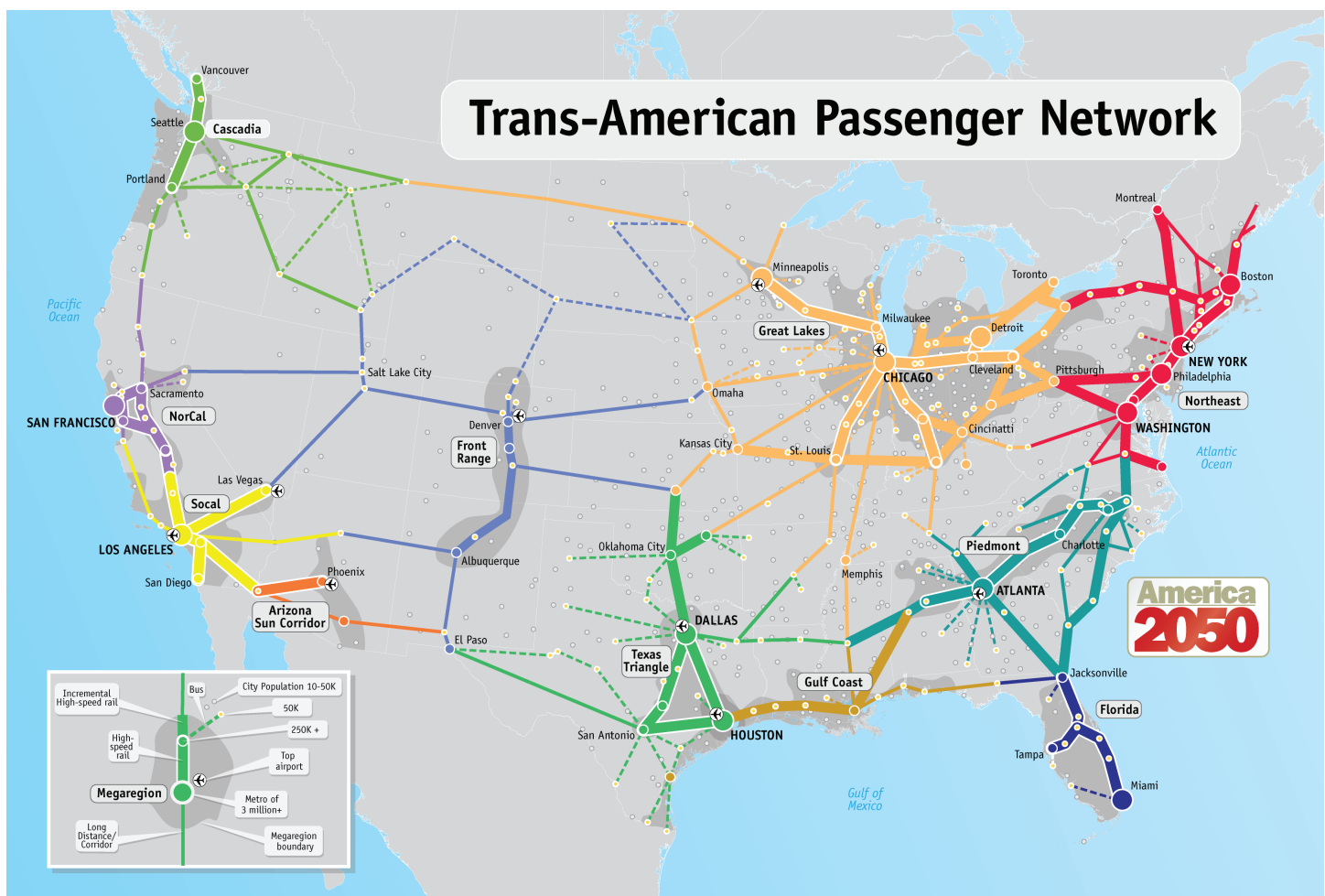
Corridors connecting populous regions with large job centers, rail transit networks, and existing air

markets scored best. The top performing corridors in each region determined to have the greatest potential demand for high-speed rail ridership included the usual suspect corridors: the New York-Washington, DC segment of the NEC; Chicago-Milwaukee; Los Angeles-San Diego; Tampa (via Orlando) to Miami; Dallas-Houston; Birmingham-Atlanta-Charlotte; Portland-Seattle; and Denver-Pueblo. The America 2050 recommendations did not consider constructibility or cost to construct as an element of discernment.

## HIGH-SPEED RAIL DREAMS

Others have drawn similar maps based primarily on conjecture and discernment of the work done for America 2050. A map that received a lot of attention was prepared by Alfred Twu. He has said his map is a composite of several proposed maps from 2009 when government agencies and advocacy groups

### America 2050 High-Speed Rail Corridors



Source: America 2050; Regional Plan Association

were talking big about rebuilding America's train system. The map depicted below is very expansive to the point of having two transcontinental connections. The map was tweeted by an influencer on X (formerly known as Twitter) and quickly went viral, earning over 185,000 "Likes" and more than 50,000 retweets. It was retweeted by Secretary of Transportation Pete Buttigieg, which generated even more discussion. It seems that Generation X really likes high-speed rail. Twu said, "America needs to revisit the high-speed rail conversation. Given how much my map got people talking and dreaming, I am more convinced than ever that there is public support and demand for a true high-speed rail network." Is the dream of transcontinental high-speed rail viable? Probably not. But there is merit

in examining what is and can be viable unburdened by past thinking.

This high-speed rail system dream map led to the creation of yet another map, this time by Alon Levy of Pedestrian Observations. His map is quite insightful. He drew a map that differs from past ones in visible ways - for one, it was not a connected transcontinental network. Analytically, he projected passenger traffic by a gravity model, which depended on the product

## High-Speed Rail Dream



Source: America 2050; Regional Plan Association



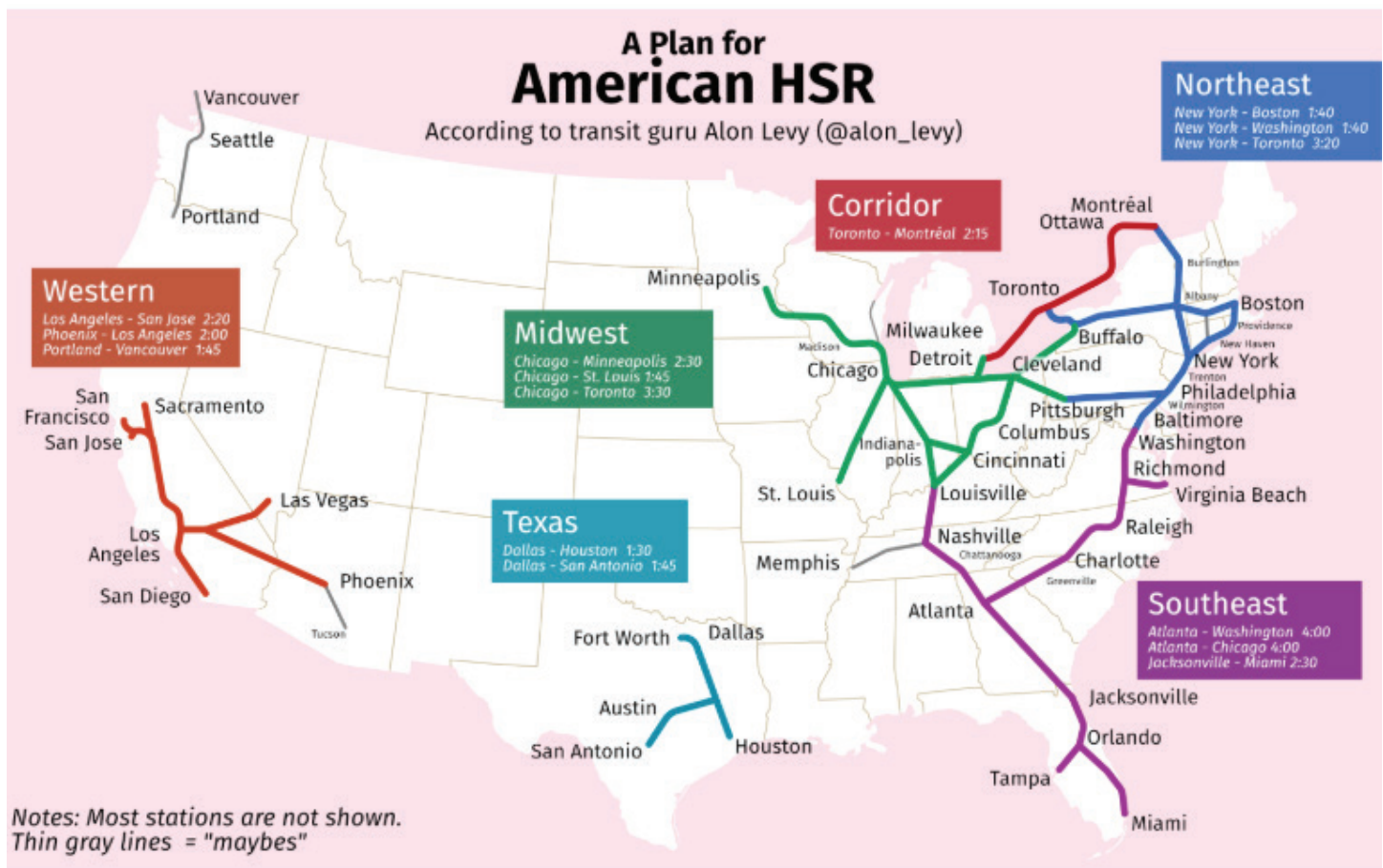
of two metro areas' populations. America 2050 used different methodologies. The emergent difference is a less connected network. So, why a less connected network? Friction of distance and travel time. High speed rail is very costly to build, operate and maintain and only appropriate in heavy travel markets that are too short to fly and too long to drive. In examining travel markets Levy found travel between Chicago and Florida to be very strong and the intermediate travel markets of other city pairs on the route made it even better. Or as some people call it, a string of pearls. Not unexpectedly, there is overlap with the findings of America 2050.

## FRA REGIONAL RAIL PLANS

The FRA commissioned a series of regional rail plans over the past several years. The plans prepared were for the Southwest, Southeast and Midwest. If you stitch together the regional rail plans you get the semblance of a national rail plan, especially when you add the NEC, the Texas Central Dallas - Houston project and the Cascadia Corridor. The map shows, if the lines recommended by the FRA's studies are built, a vast part of America will be served by fast trains.

For example, there would be electrified high-speed trains from Birmingham to Boston, MA; from Phoenix to San Francisco; and from St. Paul to Miami. These would each create the spine of extensive localized rail networks serving their regions.

### A Plan for High-Speed Rail Corridors



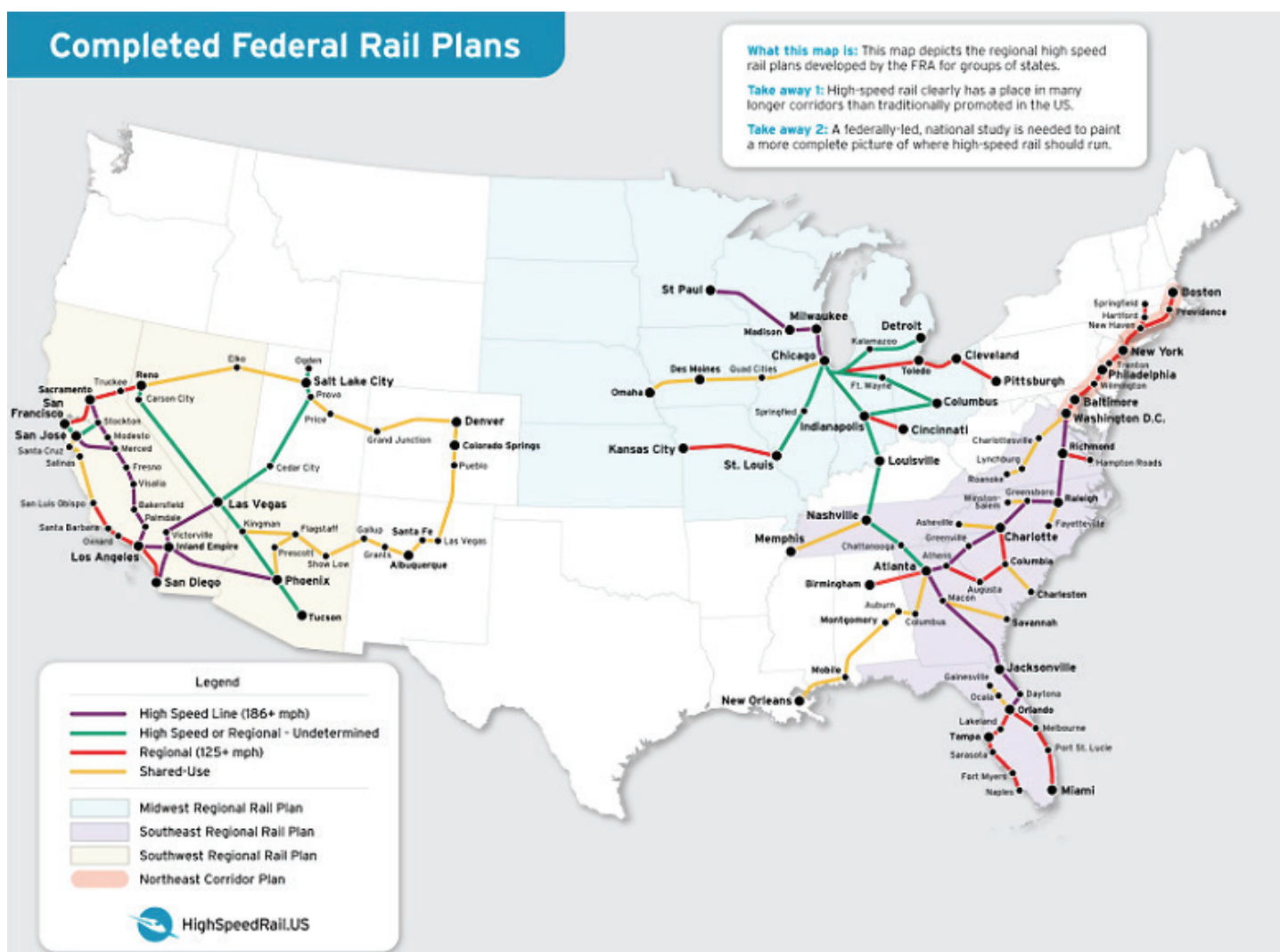
Source: Alon Levy

There is a need to complete a national rail plan that guides passenger rail service development over the course of the next several decades much like the interstate highway system was planned and constructed. There needs to be a consensus that spans time and does not come undone by newly elected officials as happened in Ohio, Wisconsin and Florida when incoming newly elected Governors canceled passenger rail projects planned and approved (and funded) by previous Governors. Is that even possible given the divisive politics that frame the discussion? We need to highlight the benefits, make the business case if you will, of high-speed rail and why it is a critical component of the transportation network for the 21<sup>st</sup> century. One of the glaring problems with the FRA regional rail plan for the Midwest is how certain corridors were ignored because states did not actively participate in the study process. In most of the other maps highlighted, the Ohio 3C Corridor (Cleveland-Columbus-Cincinnati) is a prominent feature and an important network connector permitting north-south travel. Can you guess which

state did not actively participate? Yes, it was Ohio.

## MARKET ASSESSMENT FOR HIGH-SPEED RAIL

In reviewing all the prior studies and empirical evidence from existing high-speed rail systems, we have learned what characteristics define viable high-speed rail projects. High-speed rail works best when you connect highly populated regions and intermediate city pairs with high travel volumes and by speeds that compete with auto and airplane travel options. As suggested earlier, high-speed rail thrives where trips are too far to drive and too short to fly. The chart below shows the rail/air market share in select high-speed rail corridors around the world. Trips that are approximately 200 to



Source: High-Speed Rail Alliance from FRA Regional Rail Plans



600 miles in length and take between 1 and 3.5 hours by high-speed rail are very competitive with automobile and air travel options.

This corresponds to travel distances between many metro areas in the US as depicted in the America 2050, Alon Levy and FRA regional plan maps.

Recently, AECOM was asked to assess what travel markets in the US were ripe for high-speed rail development and investment. The market assessment was comprised of three components: the total travel market and its characteristics,

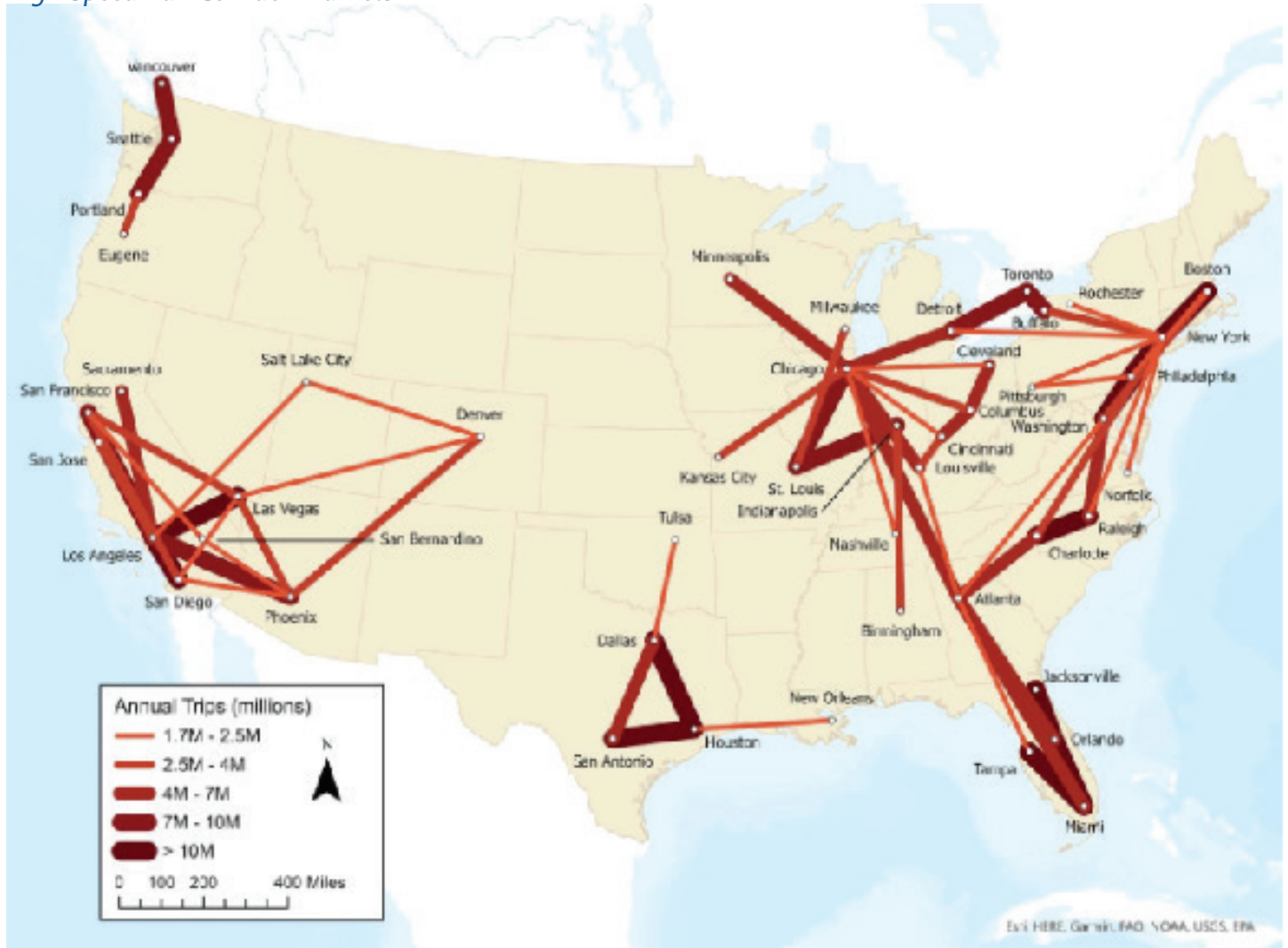
City Pair	Distance (miles)	HSR Travel Time (hrs min)	Rail Share
Paris – Brussels	192	1:30	98%
Paris – Lyon	267	2:00	85%
Madrid – Seville	292	2:15	85%
Tokyo – Osaka	319	2:30	80%
Paris – London	306	2:15	75%
Rome – Bologna	222	2:30	72%
New York – Washington, DC	236	2:45	60%
Stockholm – Goteborg	282	3:00	58%
Paris – Amsterdam	279	4:00	45%
Rome – Milan	347	4:30	40%

Source: SilverRail Technologies for European/Asian HSR city pairs. Amtrak for New York – Washington, DC.

the rail-specific market (both in terms of its ridership and service offered) and competing modes. Using the Federal Highway Administration’s (FHWA) NextGen Passenger trip volume dataset and other data, several high-volume corridors that fit the defined parameters were visualized using interactive mapping tools to highlight the US travel markets with the highest annual trip volumes between metro areas that were 225 – 600 miles apart and supplemented with high-volume shorter-distance markets between major city pairs. The study team identified several potential high-speed rail markets and routes. Some potential routes were already in advanced planning or construction. The remaining travel market routes were evaluated for

high-speed rail suitability and prioritization for further analysis. The following map depicts the potential high-speed rail travel markets identified by the data driven market analysis.

The market assessment replicated the findings from the America 2050 studies and corresponds to the Alon Levy gravity model maps. There are several major travel markets in the US that are ripe for high-speed rail development in addition to the California, Dallas - Houston and Brightline West high-speed rail projects. This includes connecting Phoenix to the California network currently under construction, extending the NEC south to Atlanta as envisioned by the Southeast High-Speed Rail Commission; the Midwest/Chicago Hub network, including Chicago – Detroit – Toronto; the Ohio 3C Corridor; New York Empire Corridor and the Cascadia Corridor in the Pacific Northwest.



Sources: AECOM 2023; FHWA's NextGen Passenger trip volume dataset, 2021; International Mobility and Trade Corridor (IMTC) Program; Bureau of Transportation Statistics T-100 Segment dataset, July 2022 - June 2023; ESRI, 2023.

## CURRENT HIGH-SPEED RAIL DEVELOPMENT IN THE UNITED STATES

Here in the United States, development of high-speed rail has been very slow and fraught with political anguish. As highlighted, during the past 60 years there have been numerous studies either completed or on-going in a variety of locations across the country examining improvements to existing passenger rail corridors or studying new high-speed rail services. Actual construction of new high-speed rail has been limited to California, Florida and most recently Nevada.

### California

The California High-Speed Rail Authority (Authority) was established in 1996 after decades of advocacy for building a high-speed rail system linking Los Angeles and San Francisco. The programmatic environmental impact studies began in 2002 and were completed in 2005. The programmatic studies evaluated the system's ability to meet the transportation system's current and future demand, established purpose and need, and examined feasibility. Project-level environmental impact studies were initiated in 2007 and completed in stages beginning with the Merced - Fresno and Fresno - Bakersfield sections in the Central Valley. The FRA

issued the Record of Decision for the Merced – Fresno section on September 19, 2012, followed by the Record of Decision for the Fresno – Bakersfield section nearly two years later June 27, 2014. Right-of-way acquisition services were completed in 2014. Construction contracts began to be awarded in 2013, and the groundbreaking ceremony for initial construction was held on January 6, 2015.

Currently, the Authority has 119 miles of active construction in the Central Valley with dozens of active construction sites. The Authority is expected to begin revenue service sometime between 2030 and 2033 for the initial 171-mile segment from Merced to Bakersfield. This segment will be the fastest in the Americas, with a top speed of 220 mph. It will have taken California over 30-years to plan, design and construct 171 miles of high-speed rail when the initial operating segment is completed. Compare that to France and Spain. China is an important exception to how major infrastructure projects get planned and designed, but instructive nonetheless on how to build them quickly.

The High Desert Corridor project in California is planned to link the Brightline West and California high-speed rail projects. The High Desert Corridor project recently completed Step 1 of the CID program and is scheduled to complete its service development planning efforts in 2025.

## Brightline

Brightline is a privately-owned and operated intercity passenger railroad developed by Florida East Coast Industries; a Floridian real estate developer owned by Fortress Investment Group. Brightline planned and built a new intercity passenger rail service in Florida linking Miami to Orlando and is planning and constructing a new high-speed rail line connecting Las Vegas to suburban Los Angeles. The Brightline Florida service between Orlando and Miami is the only other high-speed rail route where trains can travel up to 125 mph (200 km/h) on a segment of dedicated track between Orlando and Cocoa Beach. Brightline is also constructing a high-speed rail line connecting Las Vegas to Rancho Cucamonga in suburban Los Angeles, which is planned to operate at speeds up to 220 MPH.

**Brightline Florida** - The new intercity passenger rail service in Florida began its planning in 2012. By 2013 the FRA issued a Finding of No Significant Impact (FONSI) on the initial line segment connecting Miami to West Palm Beach. The passenger rail service would use the existing tracks of the Florida East Coast freight railroad. Construction began in November 2014 and the route began revenue service in January 2018, initially between Fort Lauderdale and West Palm Beach; the Miami to Fort Lauderdale segment began revenue service in May of that year. Infill stations at Aventura and Boca Raton opened in December 2022.







Brightline extended its service to Orlando International Airport using the exis and a new purpose-built dedicated alignment from Cocoa to the airport. Service was initiated to Orlando in September 2023. Maximum authorized speeds are 110 mph on the Miami – Cocoa segment and 125 mph on the Orlando –Cocoa segment. Brightline's new route in Florida cost an estimated a \$5 billion backed by Fortress Investment Group using a mix of private equity, bonded debt and federal loans and state grants. Having the funding in place expedited project delivery.

**Brightline West** - In September 2018, Fortress Investment Group announced that it would acquire XpressWest, a proposal to build a privately funded high-speed rail passenger train connecting Las Vegas to Southern California by venture capitalists associated with a hotel management group. In September 2020, Fortress Investment Group renamed the project Brightline West announcing it would complete planning, design build and operate high-speed trains at speeds up to 220-mph in the 218-mile corridor between Las Vegas and Rancho Cucamonga in suburban Los Angeles. The Rancho Cucamonga Station will be located near Ontario International Airport and co-located with existing multi-modal transportation options including California Metrolink. This would provide seamless connectivity to Downtown Los Angeles and other locations in Los Angeles, Orange, San Bernardino and Riverside Counties. Eventually, Brightline West would connect with the California high-speed rail project through

the High Desert Corridor and travel directly to Los Angeles Union Station. Approximately 96 percent of its alignment would be within the median of the I-15 highway. Despite some funding difficulties, Brightline West has secured \$3 billion dollars from the Bipartisan Infrastructure Law and \$3.5 billion dollars of private activity bonds from the US Department of Transportation. Brightline West officially broke ground on the nation's first true high-speed rail system in April 2024. Construction is estimated to take four years, and service is expected to be inaugurated in time for the 2028 Los Angeles Olympic games. Having the necessary funding in-place was a major boost to getting the project moving forward. Brightline selected Siemens to build its high-speed trainsets.

## Texas

The Dallas – Houston (Texas Central) high-speed rail project completed its environmental studies and received a Record of Decision. But the investors pulled the plug on further development because of endless litigation and political infighting causing delay and increasing project costs. Amtrak took over the project and has advanced the project into the Step 3 Project Development phase of the FRA Corridor Identification and Development (CID) program. A brief review of the history of the project is instructive.

The Texas Turnpike Authority (TTA) studied the feasibility of high-speed rail in the Texas Triangle region in 1989. The Texas Triangle is a region of Texas that contains the state's five largest cities and is home to most of the state's population. The Texas Triangle is formed by four main urban centers, Dallas-Fort Worth, Austin/San Antonio and Houston. The TTA recommended forming an independent state agency to manage construction, which led to the creation of the Texas High-Speed Rail Authority (THSRA). In 1994, a high-speed rail project in Texas failed after \$70 million in investment. The French company that won the Texas high-speed rail franchise failed to meet a financial deadline, and the state's high-speed rail movement stalled. In 2009, Lone Star High-Speed Rail LLC was founded, and in 2012 it changed its name to Texas Central Railway (TCRR).

In 2014, TCRR unveiled the Dallas-Houston bullet train project, which would reduce the travel time between the two cities to under 90 minutes. In 2014, the FRA initiated an Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act of 1969 (NEPA) to assess a petition brought forth by TCRR. The Petition for Rulemaking for a Rule of Particular Applicability (RPA) contains TCRR's proposal to construct and operate an approximately 240-mile high-speed rail system based on the Japanese N700-Series Tokaido *Shinkansen* technology. FRA granted TCRR's rulemaking petition on August 30, 2019. On March 10, 2020, FRA published a Notice of Proposed Rule Making (NPRM) proposing a set of minimum federal safety standards to enable effective safety oversight of the operation of TCRR's high-speed rail system within the United States utilizing Shinkansen technology.

The Dallas – Houston high-speed rail project has faced resistance from residents of the rural counties on its proposed path. Landowners opposed to the project filed a lawsuit in 2020 challenging TCRR's right to use eminent domain to acquire land for the project. In 2022, the Texas Supreme Court ruled in favor of TCRR and finally recognized that the company had authority to acquire strips of land needed to build the rail line using eminent domain. By then, the initial funding for the project dried up. The CEO and railroad's board stepped down. In 2022, Amtrak began exploring a partnership with TCRR to advance the high-speed rail project. In 2023, Amtrak was awarded funding through the FRA CID program, which has supported the preparation of a Service Development Plan (SDP) in compliance with FRA guidance. As the project sponsor, Amtrak will lead the project through its planning, project development,



construction, and operations stages.

The Dallas – Houston high-speed rail project has been in the study phase for more than ten years. It has a Record of Decision and Rulemaking and is now in the project development phase of the CID program. It will be several more years before the project is ready for construction. It will take several more years to complete the project.

## Foreign HSR Development

While the United States has studied high-speed rail for the past 60 years, European and Asian high-speed rail development began blossoming following the success of the Tokaido Shinkansen in Japan in 1964. In France, the state-owned Société Nationale des Chemins de fer Français (SNCF) began working on its first Train à Grande Vitesse (TGV) high-speed rail line in 1966. After ten years of planning and design, SNCF purchased 87 high-speed trainsets from Alstom in 1976. TGV service between Paris and Lyon was inaugurated in 1981, only 15 years after initial studies. The Paris – Lyon TGV Sud-Est line was a major success for SNCF, and the TGV network continued to expand throughout France to Calais in the north, Marseilles in the south, Bordeaux in the southwest, and Strasbourg to the east. Today, over forty years after the first TGV line, France has built or upgraded 1,700 miles (2,735 km) of rail lines across the country connecting Paris to many major French cities and other countries across Europe.

Spain opened its first high-speed rail line in 1992 connecting the cities of Madrid, Córdoba and Seville. Since then, the Spanish network has grown considerably linking most of its major cities and becoming the longest

high-speed rail system in Europe encompassing a network over 2,469 miles (3,973 km). It is the second longest high-speed rail network in the world, only after China's. (See **SPEEDLINES Issue 38** for more insight on the Spanish network.)

China's network is truly remarkable. The planning for China's extensive high-speed rail network took off in the early 1990s, guided by the leadership of Deng Xiaoping. He previously traveled to Japan in 1978, where he was profoundly impressed by the Tokaido Shinkansen. This experience inspired him to establish a "high-speed rail dream" program aimed at investigating the feasibility of creating a high-speed rail network in China. In December 1994, the State Council commissioned a feasibility study for the Beijing - Shanghai high-speed rail line. By 2008, the first high-speed rail line was inaugurated between Beijing and Tianjin. Since then, the total length of China's high-speed rail network has grown to over 28,500 miles (approximately 46,000 km) of dedicated high-speed rail lines. See **SPEEDLINES Issue 38** for more insight on China's network.

Other countries have developed high-speed rail lines in high volume travel corridors to ease highway and air system congestion. These countries include Austria, Belgium, Denmark, Finland, Greece, Indonesia, Morocco, the Netherlands, Norway, Poland, Portugal, Russia, Saudi Arabia, Serbia, South Korea, Sweden, Switzerland, Taiwan, Turkey, the United Kingdom. Vietnam recently announced plans to connect Hanoi to Ho Chi Minh City (formerly Saigon) with high-speed rail.

spanning several decades and generally take longer than the terms of most elected public officials, especially state Governors and U.S. Presidents. Paving roads and expanding highway capacity is easier and faster in comparison and funding is assured through the Highway Trust Fund.

The issue compounding the delay in realizing project completion and benefit generation for any of the high-speed rail projects in the United States is the lack of political consensus causing insufficient funding to expedite design and construction. Yes, the regulatory and approval regimen in the United States is somewhat complex, burdensome and is fraught with litigation risk. But the lack of legislative consensus and adequate appropriations to fund the design, construction and acquisition of system elements are essentially the largest obstacles to high-speed rail development in the United States. In most cases, the ballooning of costs is a self-generating consequence of delays in getting programs planned, approved, funded and built expeditiously.

We require a national rail plan similar to the highway plan that led to the creation of the Eisenhower National Defense Interstate Highway System. A well-integrated passenger rail system featuring high-speed trains in busy corridors would greatly enhance economic development and positively benefit the environment. We can continue to dream.

## Lessons Learned - To Address

High-speed rail projects in the United States take too long to plan, design and construct often





# INTEGRATING INTERCITY AND HIGH-SPEED RAIL SERVICES WITH AIR TRAVEL

Contributed by: James Michel, PE, President, Transportation Risk Mitigation, LLC

Around the world, rail links to airports have been built using a variety of technologies ranging from streetcars to 200+ mph trains. Airport links also embody stations right in the terminal within walking distance of baggage claim to remote locations requiring automatic people movers (APMs) and/or buses to reach the trains. A majority of rail links are designed to connect airports to center city locations where travelers must change to another mode or different rail service(s) to complete their journey. Such connections often involve added walking or climbing, a chore if large luggage is in tow. As a result, many of these services end up being primarily used by airport and airline employees who have mastered the path. Occasional users find the public transit option less than desirable.

There are three scenarios for air-rail integration:

- Point-to-point travel between metropolitan areas, where the passenger takes a train instead of a plane even if ticketed as part of an airline itinerary.
- Airport rail station to a distant metropolitan area or vice versa. This may entail flying in one direction

and rail in the opposite direction to make one day journeys possible or opting to use the convenience of the airport's supporting infrastructure (rental cars, parking, hotels, etc).

- Connecting air flights with code-shared intercity rail operations at an airport to reduce short-haul flights of 200 miles or less. This option also can increase the number of destinations for air carriers to cities they do not serve.

This article will focus on the third scenario as future intercity rail initiatives, particularly high-speed rail, that integrate with aviation can lead to better traveler satisfaction, enlarging metropolitan catchment areas, and contributing to improved climatic outcomes with reduced auto and short-haul air trips. Carbon emission abatement in transportation delivery is a rising global concern, especially for the aviation sector where new propulsion technology is still in the early R&D phase. Substituting higher speed intercity rail services with user-friendly airport-rail interfaces can provide airlines with carbon credits when short-haul flights are replaced with trains.

European Airports with Intercity Rail Service\*

AIRPORT	COUNTRY	RAIL STATION	AIRPORT	COUNTRY	RAIL STATION
Brussels (BRU)	Belgium	In Terminal	Frankfurt (FRA)	Germany	Adjacent
Amsterdam (AMS)	Netherlands	In Terminal	Dusseldorf (DUS)	Germany	APM
Paris (CDG)	France	In Terminal 2 + APM	Cologne (CGN)	Germany	In Terminal
Lyon Satolas (LYS)	France	Adjacent	Berlin (BER)	Germany	In Terminal
Geneva (GVA)	Switzerland	In Terminal	Copenhagen (CPH)	Denmark	In Terminal
Zurich (ZRH)	Switzerland	In Terminal	Madrid (MAD)	Spain	In Terminal**
Stansted (STN)	England	In Terminal	Stockholm (ARN)	Sweden	In Terminal
Birmingham (BHX)	England	APM***	Gatwick	England	Adjacent

\*Not intended to be all inclusive list

\*\* High Speed Rail Under Construction

\*\*\*Plus Future Connection to HS2

Adjacent means within walking distance

APM means intra-airport people mover connection

## EXPERIENCE IN EUROPE

For over 50 years, Europe has been integrating intercity train stations into airport terminal design. Prime examples are Zurich and Amsterdam Schiphol with over 40-years of integrated operation with the train stations located below the airport terminal. More recently, Paris Charles DeGaulle, Brussels, Lyon-Satolas, Geneva Cointrin, Copenhagen, Cologne, and Frankfurt have been added to the list. (See Table) Looking forward, in 2025 Madrid Barajas will be getting an “in-terminal” HSR service to supplement the existing commuter and metro facilities. Many other airports have quality metro/commuter rail service or dedicated airport express trains that share the same infrastructure as intercity and HSR services but still require a train change at a center city station. There have been several European initiatives that gave rise to solutions adaptable in the USA when intercity rail services are

### Paris Charles de Gaulle Airport Station



Located on the TGV Interconnexion line, the Paris airport station has access to all four of the SNCF high speed rail networks; Southeast, Atlantique, East, and North. Photo: J. Michel

### Frankfurt Airport Station



ICE Trains to many German cities supplement Lufthansa flights and provide easy connectivity for travelers. Photo: J. Michel

available to cities within 150-200 miles of an airport. In the 1980s, Lufthansa had dedicated trains in Lufthansa livery and on-board services connecting Frankfurt, Bonn, Köln, Düsseldorf and later Stuttgart operated by DB and limited to airline passengers. In the UK, Virgin Airlines created a subsidiary, Virgin Trains, to provide cross country intercity services with many trips originating at Gatwick Airport.

Global efforts to reduce carbon emissions are driving cooperation between rail operators and airlines who view the substitution of high-speed and intercity rail service for short-haul flights as a strategy. Based on research by the French Agency for Ecological Transition (ADEME), a 239 mile journey between Paris and Nantes emits 2.47 lbs of carbon equivalents per person by high-speed train vs. 218 lbs by aircraft. European airlines view this difference as a means to offset carbon emissions of longer air journeys. In December 2022, the French government was given authorization by the European Union to ban airflights of less than 2.5 hours when a direct rail passenger alternative of less than 2.5 hours travel time was available provided there exists sufficient train frequencies and scheduling that allows for one-day round trips with at least 8 hours at the destination.

The French Railways (SNCF) and Air France have had a joint marketing venture for over 20 years called Air+Rail where travelers can add rail journeys to flights enabling Air France to ticket to most any rail station in France. More recently, many SNCF TGV trains from Paris Charles DeGaulle airport carry AF flight numbers. The Paris DeGaulle rail station is situated in the middle of Terminal 2 and directly connected to the original

Terminal 1 providing on average a 15-minute travel time from all baggage claim devices. Intercity services at CDG are exclusively high-speed TGV trains which provide competitive journey times when compared to plane to plane connections. The Air+Rail program is also available to KLM, Delta and United travelers although city pairs may vary depending upon specific seat codeshare agreements. KLM in particular uses rail for connections with Eurostar to Brussels and Antwerp. In 2025, Eurostar and Trenitalia will be joining the Sky Team Alliance for greater integration with Air France, KLM, Delta, and ITA at the CDG and AMS hubs.

In 2021, Lufthansa and DB strengthened their relationship with the addition of limited-stop “Super Sprinter” ICE services between Frankfurt and 17 major cities. Many of these trains carry both DB train numbers and Lufthansa flight numbers and are shown as flights in the Frankfurt Airport information displays departing from the T gates in the airport rail station. To further enhance the travelers’ experience, there is a baggage and check-in counter in the

Frankfurt airport rail station. Downtown rail stations in German cities have separate IATA codes to permit ticketing in airline reservations systems. The two carriers created “Express-Rail” package of benefits that include advance seat reservations, advance check-in, a transfer guarantee and automatic rebooking, reciprocal lounge access, loyalty program mileage credit, access to priority airport security lines, and coordinated scheduling with a single ticket for both air and rail. In November, 2023, Express-Rail was expanded for United Airlines passengers. In October 2024, the German Railways became the first railway to become a full member of the Star Alliance marketing consortium, granting travelers from 25 airlines many loyalty benefits from German rail trips.

On another business front, several US airlines entered into agreements with European railways to through-ticket inbound travelers from their hubs to other cities lacking direct trans-Atlantic services.

### *Frankfurt Airport Station*



*The Frankfurt airport station has four tracks dedicated to ICE intercity trains. Photo: J. Michel*



# HISTORICAL RAIL AND AVIATION COOPERATION IN THE UNITED STATES

There are instances of aviation and railways joining their operations in the United States. One of the earliest examples was the establishment of the Transcontinental Air Transport [later merged into TWA] transcontinental service in 1929. Travelers departed New York at 6:05 pm on the Pennsylvania Railroad's "Airways Limited" for the overnight journey to Columbus, Ohio where they boarded TAT's Ford Tri-Motors for flights to Waynoka, OK to connect with the Santa Fe Railroad. Travelers were carried overnight to Clovis, NM where they again boarded a plane for the conclusion of their journey. TAT was the first airline to offer meals on-board catered by none other than Fred Harvey, the ATSF dining car and hotel operator.

In 1990, Midway Airlines and Amtrak joined forces to offer three daily round trips originating at Philadelphia International Airport to Atlantic City with through ticketing and checked baggage service. Unfortunately, the service was short-lived due to competitive forces from both USAir and casino buses. In 2002, Continental Airlines and Amtrak established code-sharing from the hub at Newark International Airport to Philadelphia, Wilmington, New Haven and Stamford. This relationship also included reciprocal miles-earning in the loyalty programs and access to Amtrak's Metropolitan Lounges. This alliance continued after the merger with United until 2022 when changes to the Mileage Plus program made the relationship incompatible.

On a more limited scale, in the 1990s Midwest Express and Amtrak had a marketing agreement to cross honor loyalty programs to stimulate traffic at the Mitchell Field rail station in Milwaukee.

With the opening of the Orlando Terminal C, which houses the Brightline Rail Station, frequent rail departures to West Palm Beach, Fort Lauderdale and Miami offer international air carriers the ability to offer onward connectivity. To facilitate through ticketing, Brightline was recently awarded an IATA carrier code of "BE."



*Newark Liberty Airport Station*

*Newark Liberty Airport has the frequency of rail service with a proven record of airline to intercity passenger connectivity.*

## ATTRIBUTES OF AMERICAN RAIL-AIR CONNECTIONS AND FUTURE APPLICATIONS

While many US airports have rail connections, these systems often require a traveler to transfer to intercity rail at some other station with no guarantee of connectivity or barrier-free interface. For intercity rail to supplement air travel to destinations within 200 miles of an airport, there should be rail service at a minimum frequency of every two hours to instill confidence that a reasonably secure connection and/or a back-up connection is available. Ideally intercity train(s) should depart from the airport proper (walking distance of the baggage claim) or be connected to the airport with an intra-terminal APM to reduce the number of modal transfers. There also needs to be schedule coordination between air carriers and the rail operator using through ticketing and remote air ticket check-in at the journey origin, and access to priority security screening at the airport transfer. Well-marked wayfinding within the airport with reliable vertical circulation is also mandatory to accommodate travelers with luggage and mobility needs.

The Amtrak Northeast Corridor is perhaps the only current intercity rail service today with the schedule frequency, higher speeds, and connectivity through the Newark Liberty Airport (EWR). Resurrecting

the United Airlines service model, particularly for international carriers without direct air services to Philadelphia, Wilmington or Baltimore, has potential to replicate the European experience. In terms of reducing carbon emissions, domestic air carriers might substitute rail for short distance trips much the way the French and Germans have done. Baltimore Airport (BWI) has a similar profile but relies upon a dedicated bus connection. A proposal for an airport APM that would link the rail station and car rental center to the terminal remains in the planning stage. With the arrival of the AIRO dual mode trainsets, BWI could become a gateway for services into Virginia with the elimination of the Washington locomotive change.

Looking to the future, what other airports are possibilities for integrated air-rail service?

- San Francisco (SFO) using the Millbrae station and BART shuttle is awaiting the arrival of California High-Speed Rail which would allow rail to substitute for Central Valley destinations such as Fresno and Bakersfield.
- Chicago O'hare (ORD) has a METRA rail station already integrated with the car rental facility and airport APM where Amtrak regional trains could originate for downstate Illinois, Ohio, and Michigan destinations with only an enroute stop at Chicago Union Station. Trains could replace some planes to South Bend, Springfield, Grand Rapids, Toledo with service frequency increases and cooperation with the host railroads.
- Miami (MIA) has provisions for intercity service at its MIC rail station that is today served by frequent TriRail service and could accommodate more extensive intercity options whether by Amtrak or Brightline within Florida.
- T.F. Green Airport in Providence (PVD) offers another NEC opportunity if and when the intercity train platforms are constructed (currently only the MBTA has a platform) to facilitate single ticket service to New London, New Haven, and Stamford.
- Philadelphia (PHL) International has a SEPTA airport station compatible with intercity service as previously demonstrated in 1990. Having some Keystone Corridor trains originate at PHL could provide time competitive service to Harrisburg.

The devolvement of short-haul and regional services to the states after PRIIA provides a fresh opportunity to alter the structure of such services. State agencies are more in-tune to the regional traveling public and often have joint responsibility for both modes of transportation. As projects are identified in the Corridor ID Program, airport

connectivity should be a factor and likewise, as airports update their master plans, the inclusion of traveler friendly rail connections should also be a consideration. This is a long-term shift in philosophy that Europeans have been following for over half a century. Europe has had the benefit of shorter distances between major cities plus government equity participation in the rail and airline companies that has driven this process. The low-hanging opportunities in the USA involve better marketing, ticketing, and modal cooperation. Longer term, infrastructure investments that add intercity rail connections, especially high-speed rail, either directly or via dedicated APMs to airport terminals need to become commonplace. Amtrak and new passenger operators such as regional state agencies, Brightline and the future high-speed rail projects may be better positioned to foster this modal cooperation in markets that are door-to-door travel time competitive.

An immediate opportunity is to partner or codeshare with international air carriers at rail served gateways much the same way as US air carriers do in Paris, Frankfurt and Amsterdam. Amtrak with its "2V" IATA code can joint ticket with airlines. Many Amtrak stations nationwide currently have IATA codes to permit through ticketing where codeshare agreements are in place. However, business relationships need to be developed particularly involving connection guarantees and automatic rebooking to protect the traveler in the case of service interruption. Likewise, some of the larger commuter systems, although not considered intercity rail services, do connect distinct multiple metro areas 50+ miles apart that could benefit from airline joint operations agreements where they serve airports.

## CONCLUSION

In the USA, transportation planners for rail and aviation modes need to take a fresh look at how each mode can contribute to a more sustainable solution in the intercity marketplace. Air carriers can benefit from the reduced carbon emissions of the train to offset some of their long-distance flying. In creating air-rail connections, solutions must address the passengers' "rigors of connectivity" with explicit marketing and ticketing information, reasonable service frequency and connection times, guaranteed onward travel during disruptions, explicit wayfinding within the airport and train stations, and knowledgeable employees on both sides of the transfer. The European successes may not be fully applicable in North America but failing to look for areas of cooperation or just maintaining the status quo will not address the 21<sup>st</sup> century travel needs.



# ARE WE GETTING SERIOUS ABOUT RUNNING ON-TIME PASSENGER TRAINS?

Contributed by: Jim Mathews, President & CEO, Rail Passengers Association

This was the year that the Federal Government and the courts got serious about enforcing a 46-year-old statute making it illegal for railroads to prioritize moving freight over people.

Right now, the independent Surface Transportation Board is in the final weeks of a two-plus-year proceeding involving Union Pacific and the horrible timekeeping on Amtrak's Sunset Limited operating on UP territory. And at the end of July, the Justice Department filed a civil action in a D.C. District Court against Norfolk Southern for violating preference in dispatching Amtrak's Crescent between New York and New Orleans.

Amtrak has already filed its opening motion for the final stages of the UP proceeding at the STB. Host railroads must file by December 23, and public briefs and final replies from the railroads are all due in February 2025. Norfolk Southern, meanwhile, owes Federal Judge Amy Berman Jackson a response to the Justice Dept.'s allegations by Jan. 27, 2025.

We're better positioned today than ever to enforce the preference clause – 49 U.S.C. § 24308(c), the law giving Amtrak the legal right to preference in dispatching on host railroads – but practical and political challenges remain.

Despite the age of this clause, it has never truly been tested in a court of law until now. What the courts decide might be anyone's guess. On the agency side, regulators had to wait two decades for new regulatory standards and customer-service metrics to measure railroads' performance, because the freight railroads fought ferociously – and expensively – all the way to the Supreme Court in an ultimately failed bid to stop the new rules from taking effect. They lost in 2019, and by the end of 2020 the Federal Railroad Administration published those new rules, setting the stage for enforcement.

The freight railroads argue that they lack the physical capacity to run Amtrak trains on time consistently and also claim that Amtrak's own equipment delays contribute to the problem. Dispatching Amtrak trains so that they are late more than 80 percent of the time, month after month, year after year, cannot be explained by bad weather, or supply chain disruptions, or any other operational vagaries.

Amtrak trains are routinely much later than they need to be. This is especially true now that in most cases the trains' schedules have been certified by both the host railroad and by Amtrak, and the evidence bulging from the UP docket at the Surface Transportation Board is compelling that many delays are, at best, avoidable and, at worst, deliberate.

At this stage, a brief primer might be useful. A lot of casual observers can become confused when we talk about freight trains making passenger trains late, sometimes by minutes but often by many hours. Many travelers mistakenly believe that Amtrak owns all the track on which it operates (it doesn't). Conversely, many others believe that because most of the tracks Amtrak uses are owned by freight railroads, those freight railroads have no obligation to run Amtrak first.



*Heading eastbound slowing for the station stop at Washington, Mo.*



Neither of these are true. In 1971, private railroads were losing money on passenger service, and the Federal Government created Amtrak to relieve those railroads of their common-carrier legal obligation to carry passengers. It amounted to a generous taxpayer-funded bailout of the private railroads, absorbing their rolling stock, payrolls, liabilities, pension obligations into an entity paid for by the Federal government to maintain service. Every year that Amtrak operates is a year that the private railroads no longer have to face an expensive common-carrier obligation to carry passengers on their territory. Amtrak does it for them and even pays the host railroads by the mile for that privilege.

The quid pro quo? The preference clause. It's neither confusing nor ambiguous: "except in an emergency, intercity...rail passenger transportation provided by or for Amtrak has preference over freight transportation in using a rail, line, junction, or crossing."

In its opening motion filed in October at the STB, Amtrak made what is perhaps the most common-sense argument yet made about preference.

"If air traffic controllers regularly held passengers on the ground to allow cargo planes to take off first, or if trucking companies regularly stopped big rigs on main highways blocking automobile passengers from passing around them, or if cruise ship passengers regularly were denied access to port facilities by large cargo ships, no one would think such practices were acceptable. Yet, somehow, it has become not just accepted, but expected, that interference from freight trains regularly will cause delays to Amtrak passengers," Amtrak told STB. "That should end now."

It absolutely should. And there's plenty of evidence to suggest that in many cases it actually could.

For one, look at Canadian Pacific/Kansas City Southern's handling of Amtrak trains. For more than a decade, CP has reliably moved Amtrak trains with only minimal freight-train interference and has suffered no discernible financial harm from being a good host. Railroads claim that unavoidable physical and geographical constraints on capacity drive a lot of dispatching decisions that sideline Amtrak trains, but apparently CP is uniquely unconstrained?

The performance of Amtrak's Sunset Limited – the train that is the subject of the STB proceeding – is even more telling. The Sunset got dramatically better in the first fiscal quarter of 2024, less than a calendar year after the STB proceeding began. In fact, the westbound Sunset came within four percentage points during that quarter of meeting the Federal customer on-time

performance standard. Remember, this is the train whose performance was SO bad – on-time as little as 17 percent – that Amtrak's lawyers decided in December of 2022 that they had to haul Union Pacific before the STB for relief.

Despite the apparent impossibility of running trains on time, when one of the worst performers finds their legal team responding to months of interrogatories from Federal regulators with the power to impose fines and penalties, not only does the Sunset get better, it climbs to the very top of the Federal Railroad Administration's "most-improved" list.

That sudden improvement isn't limited to the Sunset. When the Justice Dept. filed its civil action against Norfolk Southern this year, Amtrak's Crescent (running mostly on N-S territory) suffered an on-time performance level of only 33 percent. Five months after the Justice Dept.'s complaint landed before Judge Jackson, the Crescent exceeded the Federal Railroad Administration's Customer on-time performance standard, reaching 82 percent.

CPKC, the Sunset improvement, and the Crescent improvement all suggest that more often than not, Amtrak trains can be dispatched in a way that minimizes freight-train interference. I've heard from more than one of my host-railroad friends that they view the STB case and the Crescent case as a kind of unnecessary escalation, and that they prefer to see business deals negotiated to run the trains acceptably. But passengers have spent nearly half a century largely waiting in vain for passenger trains to run on time, and the government has waited nearly half a century to step in. Given that, I have to push back and suggest that what's needed here is a dose of good-faith discussion. If the Sunset was able to improve just due to the threat of the STB proceeding's outcome, why not avoid the entire unpleasant mess and simply negotiate a good and fair deal?

America's passenger-rail network creates as much as \$8 billion in annual GDP, returning many multiples of economic benefits to the communities it serves. Passenger rail is a prosperity engine for small-town and rural America, and the freight-rail industry has benefited for nearly half a century from the taxpayers' willingness to keep passenger trains off the railroads' books and run instead as a public good and not a profit-center. Running those trains on time is vital to keeping those communities thriving. Selective investment in crucial infrastructure, along with good-faith negotiations to ensure the success of both freight and passenger rail, are the keys to eliminating the long-fester problem of poor on-time performance. It's clearly possible – now is the time to get it done.

# INTERCITY PASSENGER RAIL RIDERSHIP

Contributed by: SPEEDLINES Staff



Chicago – St. Louis Lincoln service operates at 110 mph

Ridership on intercity passenger trains has fully recovered from the COVID-19 pandemic and has broken a long-standing record. Ridership on the Northeast Corridor (NEC) services are higher than pre-pandemic levels. State supported and long-distance train ridership is still lagging but expected to recover fully in 2025. Highlighted below is ridership information for Amtrak and Brightline.

## AMTRAK

Amtrak carried 32.8 million passenger trips in FY 2024 (October 1, 2023 – September 30, 2024), a 15 percent increase over FY 2023 and a record as demand for passenger-rail service has continued to increase across the United States. Amtrak's prior record-setting year was FY 2019 when it carried 32.5 million passengers just prior to the pandemic years that saw plummeting ridership. Amtrak ridership fell to 16.8 million passengers in FY 2020 because of the COVID-19 pandemic and plummeted to 12.1 million passengers in FY 2021. Ridership recovered to 22.9 million passengers in FY 2022 and increased to 28.5 million passengers in FY 2023.

Ridership is setting records on the NEC and is trending up on the state-supported and long-distance services where the recovery has been slow but steady. The breakout of ridership includes:

- **Northeast Corridor:** Ridership has now fully recovered on the NEC and is on pace to set more records as Amtrak works to improve service reliability by introducing new Acela high-speed trains and upgrading infrastructure. Over 14

million passengers rode NEC trains during FY 2024 compared to 12.1 million people who rode trains in the NEC during FY 2023. For comparison, there were 12.5 million NEC riders in pre-pandemic FY 2019.

- **State-Supported Services:** A little over 14.4 million people rode state-supported corridor trains in FY 2024 compared to 15.4 million riders in pre-pandemic FY 2019 – about 6.5 percent lower than the pre-pandemic ridership levels. Ridership is at about 93.5 percent of pre-pandemic levels.
- **Long-distance trains:** Over 4.2 million travelers rode long distance trains in FY 2024 compared to 4.5 million riders in pre-pandemic FY 2019 – a little over 6.7 percent lower than the pre-pandemic ridership levels. Ridership is at about 93.3 percent of pre-pandemic levels. The Lake Shore Limited, which serves Cleveland in the dark of the night, carried over 398,400 passengers in FY 2024 outpacing all other long-distance trains.

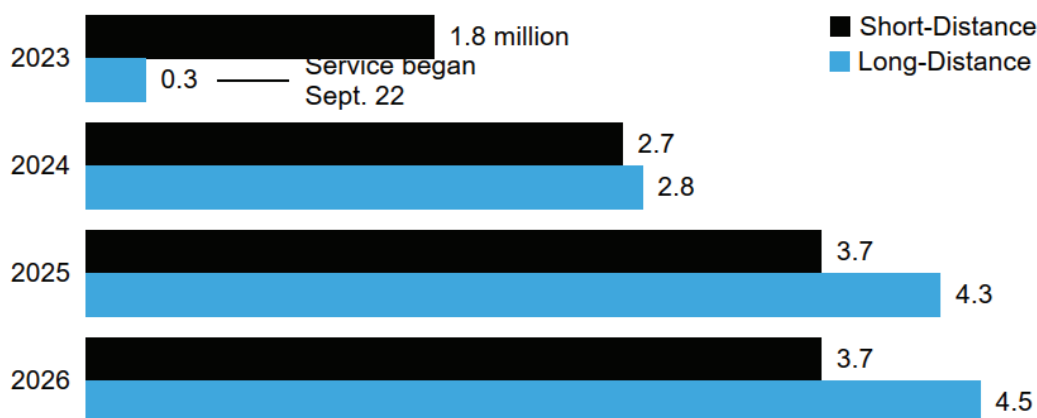


## BRIGHTLINE

Brightline Florida is a privately-owned passenger rail system operating trains over 235 miles of track between Miami and Orlando International Airport, with additional stations located in the downtown centers of Aventura, Fort Lauderdale, Boca Raton and West Palm Beach. Ridership on Brightline trains continues growing as more people become familiar with the new intercity passenger rail service. For the ten months ending October 31, Brightline carried 2.2 million passengers compared to 1.6 million passengers for the same period in 2023. The rail service carried about 2.1 million passengers in 2023.

Brightline was expected to carry 4.9 million passengers in 2024 according to a March 2024 forecast. Brightline is falling short of expectations. It is limited by capacity constraints, which are being addressed by purchasing additional railcars to lengthen trains from four cars to seven. October results were adversely impacted by two hurricanes, which collectively reduced ridership and revenue by approximately 10 percent due to impact on travel activity during the time of the storms and closure of the long-distance service for 2.5 days. Long-distance ridership from repeat customers remains strong and bookings by repeat customers are now approaching the pace of total long-distance ridership achieved last year.

### Ridership



Source: Brightline  
2023 figures are actuals;  
2024-2026 projections





# IMAGINATION TO IMPACT

## ENGAGING YOUTH TO BUILD TOMORROW'S HSR WORKFORCE

Contributed by:

Karen E. Philbrick, PhD, Executive Director, Mineta Transportation Institute, San Jose State University  
Alice Rodriguez, Deputy Director of External Affairs, California High-Speed Rail Authority

More than two dozen teenagers gaze up in awe as they take in the unfinished trainbox megastructure at San Francisco's Salesforce Transit Center. Surrounded by exposed concrete, conduit, and structural elements, these students stand in this massive underground space, a hidden world beneath the city that most never know about or get to see. It is a space filled with potential, ready to be shaped by hopes, goals, and the future these young people will carve out and build for transportation and their communities.

Workforce development lays the foundation for the future of how we move people and goods. This moment in the trainbox is a snapshot of the [Mineta Summer Transportation Institute](#) (MSTI), a program from the [Mineta Transportation Institute](#) (MTI) at [San José State University](#) (SJSU), and ongoing collaboration from regional partners, including the [California High-Speed Rail Authority](#) (CAHSRA). MTI workforce development programs begin with the littlest learners and provide myriad opportunities for young people to learn about,

become inspired by, and engage in real transportation innovation and issues that shape their lives and the world we live in. This is why we do what we do: to empower children to see their potential and place in shaping the future.

In collaboration with experienced educators, MTI and CAHSRA also developed engaging and fun elementary lesson plans to continue children on the path toward developing STEM, communication, and life skills. Programs reach students where they are, inviting them to imagine themselves in exciting, relatable scenarios like traveling to a theme park. Using innovation and imagination, they get to consider how and why people—including their own families—travel the way they do. Young children build on the skills they already have to learn new ones. They have fun while learning that they have a voice in mobility; another lesson empowers children to use this voice by writing to the secretary of transportation advocating for high-speed rail and its benefits in their communities.

As children grow, their curiosity and skills evolve, creating new opportunities to engage in meaningful workforce development initiatives. The [Garrett Morgan Sustainable Transportation Competition](#), which invites middle school students to collaborate on a project that solves an everyday transportation problem, helps youth further explore the possibilities of careers in transportation and the impact they could have on their communities. Yaqeline Castro, an outreach and student engagement specialist at the CAHSRA, spoke to Garrett Morgan participants at MTI's Career Night. Yaqeline's presence as a woman of color and relatable role model is an important part of workforce development, connecting these kids to the industry, helping them

imagine themselves in similar roles, and showing them that transportation is for everyone.

These seeds planted early on begin to grow, and workforce development programs for high school students can continue to expand young people's exposure to the exciting possibilities of careers in transportation. MSTI invites Bay Area high school students to try on college life and industry careers in a free, three-week on-campus session at SJSU with unique excursions. CASHRA has been hosting excursions for this program for the last three years, giving participants a glimpse into the sustainable, safe future of American high-speed rail and the chance to insert themselves into this narrative. Workforce development is education, skill building, and community building—all life-long journeys that benefit both the industry and the individual. Yaqeline from CAHSRA is also a student in MTI's [Master of Transportation Management](#) program at SJSU, and she uses the skills gleaned from this program to advance her career, to push industry innovation, and to uplift those who may be her peers someday soon.

The moment students look up at the Salesforce trainbox or the massive beams of the San Joaquin River Viaduct, they have been touched by a once-in-a-lifetime perspective that goes beyond any experience in the classroom. These programs give them a chance to learn directly from the engineers, the planners, and the outreach and communication staff about everything that is involved in building a mega infrastructure project. Moments like these make transportation tangible, showing students that this industry is not only critical to moving people and goods—it's about connecting communities. Workforce development is about inspiring them to see themselves as integral to it all.







# THE NEW YEAR BRINGS NEW CHALLENGES FOR PASSENGER RAIL IN WASHINGTON, DC

Contributed by: [Peter Peyser](#)

The election of Donald Trump to a second term in the White House along with a GOP controlled House and Senate paves the way for some significant changes in Washington. We read daily about the potential for significant policy swings on foreign affairs, taxes, tariffs, immigration, law enforcement, health and education. But what about transportation and, specifically, passenger rail? Looking at the history of the first Trump term and the lineup of key officials in his Administration and on Capitol Hill offers some clues.

While high-speed rail wasn't a hot topic during the recent election campaign, President Trump did talk about it last August in a live discussion on X with Elon Musk. During that chat he said about high-speed rail trains: "They go unbelievably fast, unbelievably comfortable with no problems, and we don't have anything like that in this country. Not even close. And it doesn't make sense that we don't, doesn't make sense."

One could read that quote and think we have a high-speed rail advocate at the White House again. But the

picture is a bit more nuanced when you look at the views of the team around Trump.

One initiative of the President that calls into question the future of federal support for passenger rail and high-speed rail is the Department of Government Efficiency or "DOGE". This organization, which is not a department of government, but rather what would normally be called an advisory committee, is led by Elon Musk, the world's richest person, and Vivek Ramaswamy, one of the President's 2024 primary opponents who dropped out early and offered full-throated support to the eventual winner. The DOGE will be taking aim at government inefficiency and will pass its recommendations on to the White House and federal agencies.

Ever since the election, the DOGE X account and those of its leaders has been serving up multiple examples of government waste. In late November, they singled out the California High-speed Rail project for special attention. On November 27, Ramaswamy posted this on his X account about the project: "This is a wasteful vanity project, burning billions in taxpayer cash, with little prospect for completion in the next decade. President Trump correctly rescinded ~\$1BN in federal



funds for this boondoggle in 2019, but Biden reversed that & doubled down. Time to end the waste.” Musk commented on that post with a simple “YES!”. Three days later, the DOGE website re-posted a newspaper article summarizing cost increases and schedule delays on the project.

Particularly chilling for advocates of the California project is the reference to the cancellation in 2019 of its \$929 million fiscal year 2010 grant. The cancellation never took effect because the state of California sued the Federal Railroad Administration over it and the case was not resolved before the Biden Administration came in and re-instated the grant. Ramaswamy’s reference to the correctness of that move by the Trump Administration may foretell a replay of that strategy relating to newer grants awarded to the California High-speed Rail Authority – including the \$3 billion Federal State Partnership for Intercity Passenger Rail (FSP) grant it was awarded in 2023.

In addition to the recent comments by Trump insiders about California’s high-speed rail project, it is important to look at the Trump Administration’s previous history on Amtrak and rail matters for clues for what might be ahead for conventional passenger rail.

In his first two years as President, when he had a GOP Congress on Capitol Hill, Trump proposed steep cuts in Amtrak funding, with a focus on reductions in Northeast Corridor funding. In those first two years, the GOP Congress did not go along with those proposed cuts. This was largely thanks to the support for Amtrak from suburban GOP Members in the Northeast Corridor. After the 2018 midterms flipped control of the House to the Democrats, the Administration’s budget proposals moderated.

1. The dynamic on Capitol Hill for the next two years, will be largely the same as it was during the first Trump term. While there are fewer GOP Members on the Northeast Corridor this time around, the GOP margin in the House is much smaller than it was back then. There are 4 GOP Members in Pennsylvania and New York who will likely stand up to support Amtrak funding. Given that the Republicans have only a 2-vote cushion in the House, that is enough to prevent deep Amtrak cuts.

For further perspective on the Trump Administration view on rail, it’s also important to look at the record of his pick for Secretary of Transportation. Former House GOP Member Sean Duffy established a track record of opposition to Amtrak funding during his five terms in the House. According to a review of voting records by the Rail Passengers Association, Duffy voted multiple

times in the House in favor of amendments to eliminate federal funding for Amtrak. None of those amendments passed. He also voted to prevent additional funding from going to the California High-speed Rail project. That amended was added the House version of an appropriations bill but did not make it into the final product agreed to by the House and Senate.

Duffy’s Northern Wisconsin district had no Amtrak service. Now that he is operating on a national platform rail advocates can hope that the truth of the old saying “where you stand depends on where you sit” may help moderate his views.

Moving our focus from the Administration to Capitol Hill reveals some additional texture to the picture for passenger rail in general and high-speed rail in particular in the new Congress. Key GOP leaders on the Hill have well-established records that we can examine to help prepare for what’s to come.

The biggest change in the Capitol is on the Senate side, where the GOP wrested control from Democrats and will have a 53-47 vote margin. The change in control means that Sen. Ted Cruz (R-TX) will Chair the Committee on Commerce, Science and Transportation, which has jurisdiction over rail matters. Cruz is a philosophical conservative with a generally skeptical view on federal funding of passenger rail. This skepticism came out during his recent re-election campaign when asked about the proposed high-speed rail connection between Dallas and Houston: “I’m a big believer in federalism, leaving decisions that impact the local area up to the local officials and the state officials. From my perspective, I want to get federal regulations and barriers out of the way. So, if the state decides to construct an infrastructure project, I don’t want the federal government to have rules and red tape that slow it down, and I want Texas to decide what’s the best investment to drive jobs to drive economic growth.”

In addition to his views on Texas high-speed rail, Cruz has been clear about his strong opposition to federal funding for California high-speed rail. Last May, he joined with House Transportation and Infrastructure Committee Chair Sam Graves (R-MO) in a letter to Secretary Buttigieg expressing their strong opposition to the 2023 FSP grant award to California’s project. Their letter laid out arguments against the investment and requested briefing materials from DOT on California’s recent grant applications and the process for evaluating them.

Cruz has also been a long-term and consistent critic of Amtrak. In recent years that has taken the form of his criticism of what he views as the railroad’s overemphasis

on the Northeast Corridor and its practices of providing large bonuses to senior executives with little transparency as to the benchmarks used to decide on those payments. In 2023, he helped block President Biden's slate of nominees to the Amtrak Board based on his assertion that there were too many Northeast Corridor residents on the slate. Biden eventually pulled that slate and submitted a new one in 2024.

On the House side, Sam Graves will continue as Chair of the Committee on Transportation and Infrastructure. Like Cruz, he has been a frequent Amtrak critic with regard to their compensation practices and lack of transparency. But he has been viewed by his Democratic colleagues on the committee as someone they can work with on passenger rail funding issues.

Chair Graves' views on high-speed rail are mixed. As noted above, he opposes additional funding for California high-speed rail. But he has expressed interest in the two other major high-speed rail projects in their early stages. He recently said about the Brightline West project from Las Vegas to Southern California: "I think that's going to be very successful. . . . I'm really excited about that route." And in the same interview said about the Texas project that "I'll do everything I can to help them out." This may bode well for these two projects and others.

With all of this context, what can we expect over the next two years while the Administration and Congress are both under GOP control? The history of the previous Trump Administration would suggest that we will see some pressure on rail funding in the appropriations process but little in the way of spending cuts.

But studying history does little to help us predict how the new Administration will behave when it comes to following through on the implementation of the significantly increased funding for rail programs in the Bipartisan Infrastructure Law (BIL). It is possible DOT will take a close look at already awarded grants with an eye towards pulling them back, as they attempted to do with the California high-speed rail grant in 2019. They may also make significant changes to program priorities for any Notices of Funding Opportunities to come before the expiration of the BIL in 2026.

On Capitol Hill, in addition to the annual appropriation battles, work will begin in 2025 on the reauthorization of surface transportation programs in anticipation of that 2026 expiration of the BIL. GOP leaders are likely to signal that the funding levels in the BIL – especially the very significant increases in rail programs – should not be considered a given going forward. Because of this pressure on funding levels, Democrats are likely to work to postpone action on reauthorization until 2027, when they hope the midterm elections will have delivered them a Democratic majority in the House.

All transitions to a new President and a changed Congress come with some uncertainty. This one comes with more than usual given the overall effort of the incoming Administration and congressional leaders to act on what they believe is a strong mandate to shake up official Washington.

Rail advocates cannot predict what will happen. We can only prepare our case, activate our supporters and be ready to adapt to change.





## UPDATE

# TRANSFORMING RAIL IN VIRGINIA

Contributed by: Mike McLaughlin, Chief Operating Officer, Virginia Passenger Rail Authority



## LONG BRIDGE GROUNDBREAKING

In 2020 the Virginia General Assembly, seeking a meaningful solution to the state's ever-growing traffic problem, created the Virginia Passenger Rail Authority and tasked it with implementing the Commonwealth's \$5 billion Transforming Rail in Virginia (TRV) initiative. TRV is changing the future of rail transportation in Virginia by acquiring railroad right-of-way, increasing rail capacity, and reworking passenger and freight operations to improve reliability and increase rail service in Virginia. The long-term goal is to separate freight and passenger rail services. Once Phase 2 of TRV is complete, VPRA will fund a total of 13 daily Amtrak Virginia roundtrips, up from the current eight,

along four corridors between Washington, DC and Roanoke, Newport News, Norfolk, and Richmond.

Since our creation just over four years ago, the progress made towards our goal has caught the attention of industry leaders across the country. Many see Virginia as a test case for how states can develop rail service that will be an attractive solution for citizens eager for an alternative to driving on consistently congested highways and interstates. The goal is to provide some relief for what has become an "all day rush hour."



## NEW LONG BRIDGE

The largest of TRV's projects, Long Bridge is a new two-track railroad bridge across the Potomac River that will connect Arlington, Virginia with Washington, DC allowing for the expansion of rail service to meet future demand. The new 2-track Long Bridge will be built next to the current 2-track Long Bridge, a 119-year old river crossing that currently operates at 98% capacity during peak periods. The existing Long Bridge will remain and will be dedicated solely to CSX freight rail.

The new Long Bridge, which VPRA is funding and building, will be strategically placed between the existing Long Bridge and the Washington Metropolitan Area Transit Authority's (WMATA) Yellow Line bridge and will relieve one of the worst rail traffic bottlenecks on the East Coast. The project encompasses approximately 1.8 miles of improvements including

seven rail bridges and pedestrian bridges over land, the Potomac River, and related railroad infrastructure. Through a combination of state dollars and federal grants, Long Bridge as well as all Phase 2 TRV projects, are currently fully-funded.

In October, VPRA joined officials including U.S. Secretary of Transportation Pete Buttigieg, U.S. Senators Tim Kaine and Mark Warner, as well as U.S. Representatives Gerry Connelly and Abigail Spanberger, for a groundbreaking ceremony for the \$2.3 billion infrastructure improvement project. Construction activities including site preparation have begun with large-scale construction beginning in 2025. Funded with the assistance of a \$729 million US DOT Grant from the Bipartisan Infrastructure Law, the project is scheduled for completion in 2030.





## NEW RIVER VALLEY SERVICE EXPANSION

VPRA began its TRV expansion by purchasing rail right-of-way from freight partners CSX and Norfolk Southern. Over the past two years, VPRA has acquired over 400 miles of railroad right-of-way in corridors along I-95, I-64, I-85, I-81, and I-66. In September that effort continued when VPRA signed a new deal with Norfolk Southern to purchase the Manassas Line and gain access to their Main Line (N-Line) for the expansion of service to the New River Valley.

With access to the N-Line, Virginians in the New River Valley will have state-supported Amtrak Virginia service much sooner than previously planned and at a lower cost. VPRA will use existing infrastructure with a focus on developing a station stop near the historic Cambria Depot, which previously served the community from 1904 to 1979. The New River Valley project includes a high-level platform, canopy, parking lot, siding track, and layover facility and will allow for the extension of two current Amtrak Virginia Roanoke roundtrips to Christiansburg.

VPRA and Norfolk Southern first began detailed discussions on this new agreement last winter. As VPRA developed plans to return passenger rail to the New River Valley, it became clear that service along the N-Line was the most cost effective and timely alternative. In addition, public input also suggested that the N-Line option with service to Cambria was strongly supported by the local community.

By purchasing railroad right-of-way, VPRA now has the unique opportunity to own these valuable assets and further enhance rail capacity. With the Norfolk Southern agreement as well as a similar 2021 agreement with CSX, VPRA can now work with Virginia Railway Express (VRE) to expand their service on both the Manassas and Fredericksburg Lines including offering evening and weekend trains. The ability to add evening and weekend service is something the commuter agency has recently sought as commuting trends have changed, and the need for service beyond traditional commuting times has increased. Currently, VRE offers eight roundtrips on the Manassas Line with stops at Broad Run, Manassas, Manassas Park, Burke Centre, Rolling Road, Backlick Road, Alexandria, Crystal City, L'Enfant, and Washington Union Station.



## ECONOMIC IMPACT STUDY

In November, the Weldon Cooper Center for Public Service at the University of Virginia published a study on the Economic and Social Impact of TRV. The study takes a deep dive into the benefits of expanding passenger rail service in the Commonwealth and how the state's investment in this transportation alternative will provide not only an economic boost to the state but will make generational changes in the way Virginians travel.

The Transforming Rail in Virginia: Economic and Social Impacts study estimates that spending nearly \$4.7 billion on TRV's infrastructure projects will result in:

- The creation of 33,688 jobs;
- Generation of \$2.6 billion in labor income;
- \$4 billion in additional value-added;
- \$6.7 billion in statewide economic output.

The study also mentions that the impacts of TRV are not limited to economic development. The transportation improvements will influence future property values and land use decisions, as well as positively impact accessibility and social wellbeing. The report shines a light on ways TRV can promote rail, removing barriers to its use by offering more service to more locations, creating regular users from those who previously had not considered rail as a viable alternative. Secondary impacts include the diversion of traffic from the automobile to passenger rail resulting in reduced road congestion, lower vehicle emissions, and improved safety. The study further highlights TRV's opportunity to enhance the quality of life of Virginians by expanding access to employment centers, educational institutions, and recreational areas as well as promoting tourism throughout the state.

## AMTRAK VIRGINIA SERVICE

In addition to our Transforming Rail projects, VPRA also manages the Commonwealth's state-supported Amtrak Virginia passenger rail service. The service travels through the Commonwealth from Roanoke, Norfolk, Newport News, and Richmond to Washington, DC and points north including Baltimore, Philadelphia, New York City, and Boston.

To provide the best experience for passengers on board, VPRA works closely with Amtrak as operator of the state-supported service. As a part of that, VPRA has representation on the Amtrak Food & Beverage Working Group (FBWG). The FBWG is a cross-functional team comprised of representatives from Virginia and Washington state, Amtrak employees and unions, as well as rail advocacy groups. The FBWG was created as a part of the Infrastructure Investment and Jobs Act of 2021.

The FBWG called upon Amtrak to establish a formal process for states to sell locally-sourced products on their respective state-supported routes. Virginia is currently serving as a pilot state, implementing those recommendations, and in June, began offering a local craft beer, Brewski, for sale in the café cars of our Amtrak Virginia service. The addition of Brewski to the menu aids Virginia in meeting the FBWG goals to cultivate partnerships with local producers, boost the local food and beverage industry, and improve the overall customer experience on trains. The addition of Brewski to Amtrak Virginia beverage options is the culmination of a two-year effort.







## STATION UPGRADES

In addition to Amtrak's on board service, VPRA also has a vital interest in the experience passengers have in Amtrak stations. Two of those stations, Newport News and Quantico, saw significant changes this year. First, through a partnership between VPRA, CSX, the Federal Railroad Administration (FRA), the Virginia Department of Rail and Public Transportation (DRPT), and the Virginia Department of Transportation (VDOT), a new multimodal station opened in Newport News in August.

Offering a new improved, enhanced, and accessible experience, the Newport News Transportation Center serves two daily Amtrak Virginia roundtrips between Newport News and Richmond, Alexandria, Washington, D.C., and cities in the Northeast. It was built to accommodate the expansion of service as a third roundtrip will be added as part of the TRV initiative. The center also serves as a transfer point for Amtrak Thruway Bus Service, extending travel to Norfolk and Virginia Beach, and for Hampton Roads Transit, taxi service, and shuttles to and from the Newport News-Williamsburg Airport. The station boasts a high-level platform that aligns with the train and provides a safer and more efficient way for all customers to board and alight trains.

At Quantico, a station and platform renovation project – led by VRE with funding assistance from VPRA – has completely changed the passenger experience. The \$27.5 million project improved safety and increased rail capacity for VPRA's Amtrak Virginia service and VRE's Fredericksburg Line service.

Infrastructure improvements included the construction of a pedestrian bridge above the tracks (which replaces an at-grade crossing), a new center platform, and the extension of an existing platform. The station building, which is also served by Amtrak long distance service, now has three boardable platforms, and rehabilitation of the 1953 station house included fresh paint, modern furnishings and new display screens.

The Quantico station improvements were part of a larger VPRA project, funded by the U.S. Department of Transportation and the Commonwealth of Virginia and constructed by CSX, that added 9.2 miles of a third mainline track between control points Arkendale and North Possum Point. The addition of this third track will improve on time performance for Amtrak and VRE trains. The \$101.4 million Arkendale project is a precursor to VPRA's TRV initiative that shows the value of adding track capacity.

Future station improvements planned in Virginia include the rehabilitation of the Staples Mill Station in the Richmond area. The busiest Amtrak station in the Southeast, Staples Mill served 424,617 passengers during calendar year 2023. Currently, Amtrak Virginia offers 12 daily trains to the Richmond station for service to Washington, D.C., Baltimore, New York, and Boston. Additional Amtrak long distance service is available at the station for travel to Raleigh, Charlotte, Savannah, and other cities as far south as Miami.

The Staples Mill rehabilitation project includes upgrading two platforms, adding one platform canopy, and promoting accessibility. These planned upgrades will make the station ADA compliant and will create a safer experience for passengers. Late last year Virginia Senators Tim Kaine and Mark Warner announced \$5.8 million in funding from the U.S. Department of Transportation (USDOT) towards the project, which, like the Long Bridge funding, is part of \$66 billion in rail funding made possible by the bipartisan infrastructure law.

VPRA has made great strides in developing a state-supported passenger rail service that works for Virginians. It will take cars off the road, protect the environment, and provide an option for those who cannot drive due to accessibility issues. Through our current Amtrak Virginia service and our TRV expansion projects, rail will soon be top-of-mind for those traveling to and through the Commonwealth.