High-Speed Intercity Passenger

SPEEDLINES

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AVELIA LIBERTY

Feature Story

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SPEEDLINES MAGAZINE

» p.18

PICTURED ABOVE: At the Cedar Viaduct, construction crews have begun to extend the structure across State Route 99 south of Fresno.

On the front cover:
GOODBYE ACELA, HELLO AVELIA

Amtrak's Avelia Liberty, the Alstom-built integrated high-speed trainset that will replace the equipment currently used to provide Amtrak's premium Acela Express service on the Northeast Corridor, will be significantly different in design and livery than its predecessor. The trainset sports four exterior colors: white and blue, with red accents and gray power car noses.

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HS&IPR Committee & Friends

Welcoming Al Engel as the new Committee Chair!

For those that were unable to attend our committee meeting held during the APTA Rail Conference in Denver, take note that we had an election and there are some new faces on our leadership team. Our esteemed Chair, Anna Barry, moves to Immediate Past Chair, Chris Brady from Texas Central Railway was elected Vice-Chair, Melanie Johnson from Quandel Consultants is our new Secretary and Michael McLaughlin from Virginia DRPT is Officer-at-Large. And I thank you for your confidence in electing me to lead the committee. I'm very excited to work with this talented and motivated leadership team and the committee in working for a balanced national transportation policy that includes a robust high-performance intercity passenger rail program.

We had a very well-attended and productive committee meeting chaired by Anna Barry, Deputy Commissioner of ConnDOT. We were pleased to have representation from the FRA and there was discussion of the request for comment on automated rail operations. The Fifth HSR Policy Forum now scheduled for November 27, 2018 elicited extensive comment from the membership on critical topics for presentation and interactive work sessions. Karen Hedlund reported on the committee's priorities for FAST reauthorization and this drew much reaction from the group. Peter Gertler commented on UIC collaboration and mentioned that because a North American UIC meeting was being held in D.C. during the same week, we were unable to have UIC representation at our meeting. There's quite a difference between reading about a milestone and actually experiencing the thrill of a passenger rail innovation. A few of us in the HS&IPR committee recently experienced the Brightline service from Miami to Ft. Lauderdale as part of the AASHTO Rail Council Conference on Sept. 11. What an attractive service and privately financed! The APTA HS&IPR Committee collaborated with TRB and AASHTO in sponsoring a session on the HSR ROI study recently completed by our committee under the leadership of Charlie Quandel. We thank Eric Peterson and Dominic Spaethling for their efforts in working with AASHTO staff to pull this off.

The introduction of the Brightline service by the Florida East Coast Railroad is one of the good news stories in the U.S. evolution of high-performance intercity passenger rail. There are many more choice stories, some of which are covered in this issue and some will be covered at the upcoming APTA Annual meeting in Nashville / September 23-26. Our committee meeting held at the usual time on Sunday morning will include presentations from Amtrak, ConnDOT and Virginia DRPT. We also look forward to APTA updates from the APTA leadership including Art Guzzetti, our staff advisor.

During the APTA Annual Meeting on Tuesday afternoon your committee has organized a high-speed rail panel discussing various business models being deployed to advance projects in California, Texas, and the Northeast. We have senior executives from each of these projects and FRA reporting on latest developments and the panel session is structured to be an interactive event moderated by our legislative subcommittee chair, Karen Hedlund.

We as a committee have a great deal of work to do in the next couple years if we remain true to our mission of being the voice for a national high performance passenger rail policy and program. We consider it an imperative to continue to have a Rail Title in the next surface transportation bill. What is more, we must push to obtain a sustainable and dedicated source of funding to take intercity rail funding out of the annual appropriations cycle. If you are not already involved in our committee's activities, I encourage you to consider doing so.

In this issue of SPEEDLINES you will find articles chronicling project developments, some policy comments, HSR history and more. I wish to thank Ken Sislak for assuming the publisher responsibilities and congratulate the publishing team once again for producing a high quality issue. Thank you Wendy Wenner, Eric Peterson and David C. Wilcock. I hope to see many of you in Nashville and don't forget to make plans for your attendance at the 5th HSR Policy Forum in DC, November 27, 2018.

APTA ANNUAL MEETING

SEPTEMBER 23-26, 2018 - NASHVILLE, TN

APTA will hold its Annual Meeting on September 23 through the 26 at the Music City Center in Nashville, TN. The High-Speed & Intercity Passenger Rail Committee will kick off the weekend with its meeting on Sunday, September 23 from 7:30 a.m. to 10 a.m. The meeting will feature updates from members and discussions on the November 2018 APTA Policy Forum.

The HS&IPR Committee is also planning two action-packed conference sessions:

- On Tuesday September 25 from 4:00 p.m. to 5:30 p.m., Karen J. Hedlund, Vice President, WSP USA, will be moderating a session on High-Performance Intercity Rail Project Delivery. High-performance passenger rail projects are advancing using a variety of financial models with varying degrees of public money and private investment. Panelists will summarize key elements of current projects and will engage in a facilitated discussion to include the audience. The panelist include Peter Cipriano, Special Assistant to the Administrator at the Federal Railroad Administration; Russell Roberts, Vice President Government Affairs at All Aboard Florida (Brightline), Holly Reed, Managing Director for External Affairs at Texas Central Railway, and Anna Berry, Deputy Commissioner Connecticut Department of Transportation. This session will take place in Room 207-CD, Level 2, Music City Center of the Convention Center.

Two other exciting passenger rail sessions will also be held that should be relevant and interesting to our committee members:

- The Federal Railroad Administration will host a listening session on Tuesday, September 25 from 2:00 p.m. to 3:30 p.m. The dialogue will focus on hearing your questions, concerns and ideas. These listening get-togethers have proven to be quite popular at past conferences. This particular one will be held in Room 205, Level 2, Music City Center.

- The Capital Projects Committee is hosting a session on Wednesday, September 26 from 9 a.m. to 10:30 a.m. on Infrastructure Innovations from Planning to Funding to Delivery. This session, moderated by Connie Crawford, Senior Vice President, Rail/Transit, Louis Berger, will include presentations on the MassDOT/MBTA South Coast Rail Project, Optimizing Risk Assessments of Capital Projects, and Operations & Maintenance Facility: Shaping the Community and the Transportation Landscape. This session will take place in Room 202, Level 2, Music City Center.

WE LOOK FORWARD TO SEEING YOU IN THE MUSIC CITY –

NASHVILLE, TN

Note: Session specifics are subject to change.

GERMANY'S RAIL SYSTEM

NUREMBERG – ERFURT – HALLE/LEIPZIG – BERLIN

Contributed by: Fabian Mőhring – Deutsche Bahn

Completion of Germany's largest and most innovative High-Speed Rail infrastructure development "German Unity Transport Project No.8" – commissioning and opening of the last section between Erfurt and Ebensfeld, closes the gap on the 500km new and upgraded HSR corridor between Berlin and Nuremberg.

The completion of the section between Erfurt – Ebensfeld represents the final stage on Germany's new high-speed corridor from Nuremberg – Erfurt – Halle / Leipzig – Berlin.

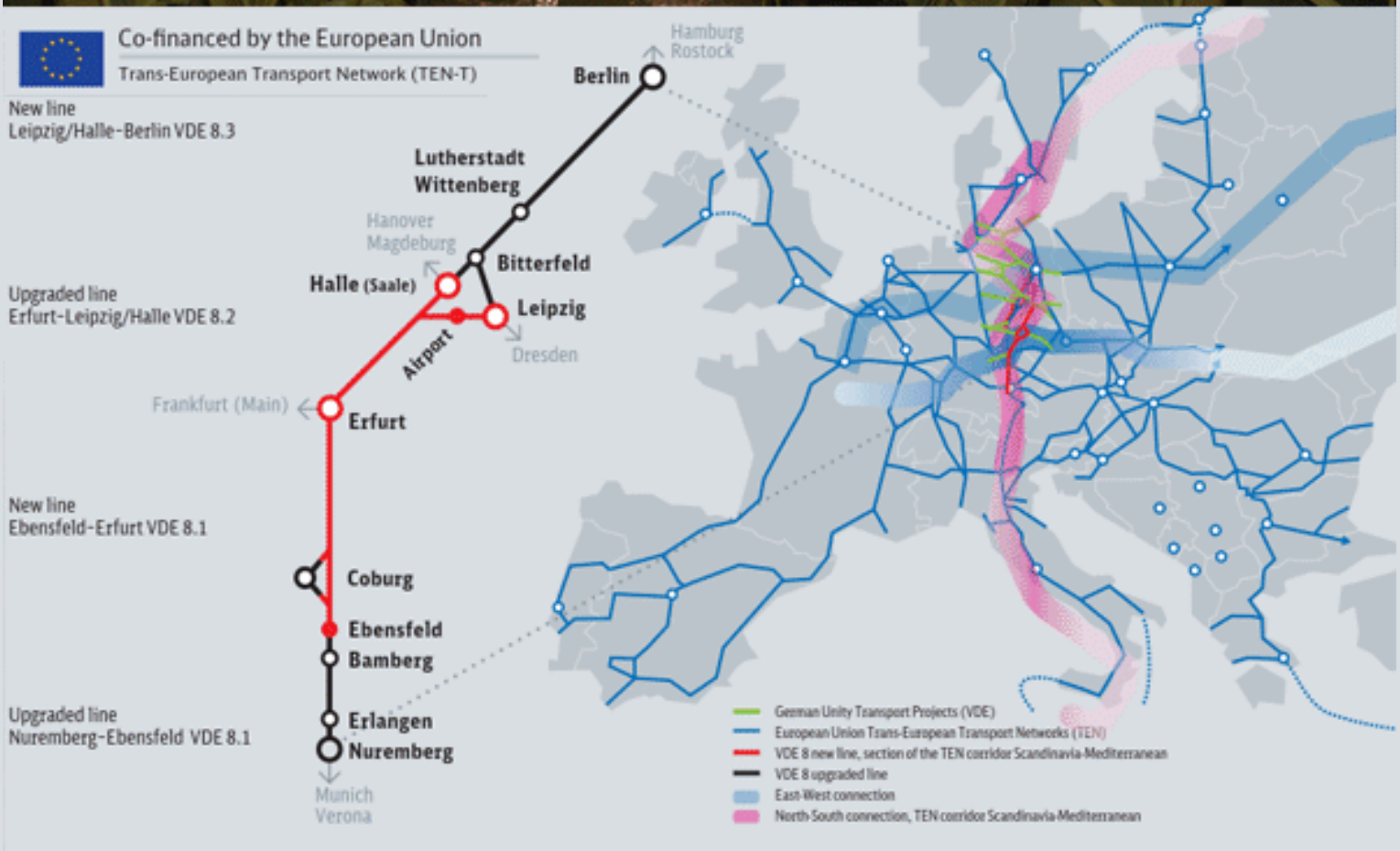
In conjunction with the commissioning and opening of this new corridor, the largest improvement in train services in the last years of Deutsche Bahn was achieved at the same time. The journey time between Berlin and Munich was reduced from 6 hours to 3 hours 55 minutes for Sprinter Trains complemented by regular interval services in 4 hours 30 minutes. Seating capacity was also increased with regards to routing long-distance services on this corridor. Therefore, HSR has become a competitive alternative to both air travel and cars.

In addition to the reduction of travel times, the system offers high-quality, improved service and tight schedule coordination with the national and international, regional and supra-regional train services.

The German Unity Transport Project No. 8 is part of the wider German Unity Transport Program ("VDE") that was approved by the Federal Government and added to the superior Federal Transportation Plan after German reunification. Because of its central location and vital importance for the trans-European rail network, the project is an integral part of the Trans-European Transport Network (TEN-T; Line 1) connecting Scandinavia and the South of Italy.

The conceptual formulation of the project was the development and realization of a high capacity route and infrastructure between Berlin and Nuremberg resulting in:

-Increased capacity and operating quality
-Increased speed to reduce travel times
-Discharge existing, overburdened routes and railways nodes
-Shifting freight traffic from highways to railways


Co-financed by the European Union
Trans-European Transport Network (TEN-T)
New line
Leipzig/Halle-Berlin VDE 8.3
Upgraded line
Erfurt-Leipzig/Halle VDE 8.2
New line
Ebensfeld-Erfurt VDE 8.1
Upgraded line
Nuremberg-Ebensfeld VDE 8.1
Hamburg
Rostock
Berlin
Lutherstadt
Wittenberg
Hanover
Magdeburg
Bitterfeld
Halle (Saale)
Leipzig
Airport
Dresden
Frankfurt (Main)
Erfurt
Coburg
Ebensfeld
Bamberg
Erlangen
Nuremberg
Munich
Verona
German Unity Transport Projects (VDE)
European Union Trans-European Transport Networks (TEN)
VDE 8 new line, section of the TEN corridor Scandinavia-Mediterranean
VDE 8 upgraded line
East-West connection
North-South connection, TEN corridor Scandinavia-Mediterranean

HISTORY AND MILESTONES

1991: commencement of the project development
1991: determination for a route via Erfurt
1992: level of planning proposes an upgraded line Berlin – Bitterfeld, new-build and upgraded line Erfurt – Halle/Leipzig – Bitterfeld, upgraded and new line Nuremberg – Erfurt
1993: land use planning assessment of the new lines resulted in planning permission by the states
1994: receiving the first planning approval decisions
1996: start of construction of the Berlin – Bitterfeld line (commissioned in 2006)
1999 – 2006: no construction on the new lines to be built due to objections from citizens and environmental associations, archaeological finds, discovery of previously unknown caves and their exploration with the result of postponement of financial resources in favor of measures in the existing network
2006: construction ramp-up on the new lines with service start on the entire route scheduled in sections for 2015 and 2017
2015: commissioning of the new-build line Erfurt – Halle/Leipzig in December
2017: Commissioning of the high-speed line Berlin – Munich on the timetable change on 10. December 2017

The upgrade of the line between Nuremberg and Ebensfeld is still ongoing while major subsections have already been commissioned.

DEVELOPMENT AND DESIGN

The route Nuremberg – Erfurt – Halle/Leipzig is centrally located in the network and used by national and international train operators of passenger and freight transport in North/South and East/West direction.

The early planning stages in the 1990s found that the capacity of the existing routes in terms of projected mixed passenger and freight transport was insufficient and limited, that the state of repair of the infrastructure was in an unsatisfactory condition with a negative impact on operational quality. The existing line was in need of improvement due to slope conditions and curve radii which led to reduced travel speed and corresponding travel time. However, an adaption of the existing line would not have achieved the goals while simultaneously resulting in massive interference with nature and environment.

As a result, the upgrade of the existing lines between Nuremberg – Ebensfeld and Halle/Leipzig - Berlin as well as new lines between Ebensfeld – Erfurt and Erfurt – Halle/Leipzig were selected as the preferred route to achieve the project target and while minimizing environmental impact.

A regional planning procedure for the new lines was completed in 1993; just 2 years after the beginning of the planning in 1991; and the first planning approval decisions were consequently obtained 2 years later in 1995.

An important premise in the planning approval was the reduction of the impact on nature (environmental, landscape and emission control). An additional 3,000+- hectares was set aside as ecological compensation area for unavoidable intervention.

The two new lines were designed for speeds up to 300km/h with a maximum pitch of 12.5 parts per thousand, transfer connections for branch speeds were designed with speeds of 130km/h. For speeds of 280km/h or above slab track was the superstructure to be used, which has much lower maintenance costs compared to ballasted track.

The entire route VDE 8 is via dams (max 15m height) and cuts (max 20m height), in case of non-compliance with these criteria the route is either over viaducts (37) or through tunnels (27).

The planning approval of the tunnel structures was carried out in 1997 with one tunnel tube and two tracks each. During the implementation, changes such as the directive on civil protection requirements for the construction and operation of railway tunnels by the Federal Railway Authority (similar to the FRA) to make tunnels safer, made the commissioning of tunnels already under construction impossible. Therefore, tunnels that were not yet under construction were redesigned into two single-track tunnels which is now the standard concept within Deutsche Bahn. The tunnels under construction have introduced a ban on tunneling for mixed freight and passenger train service operation (tunnels from minimum 1000m in length).

INNOVATIONS

-European Train Control System (ETCS) and Global System for Mobile Communications – Rail (GSM-R), no track-side signals on the new lines
-Control of upgraded and new-build lines via electronic interlocking's, which are integrated into the operating control centers (OCC) in Leipzig and Munich
-Integral and semi-integral bridge structures
-Sound insulation, i.e. hood constructions at the tunnel tubes (sonic boom)

PLANNED, ENGINEERED & IMPLEMENTED IN SECTIONS

The two new lines are the centerpiece of the overall project and were put into operation in 2015 and 2017, respectively. Construction time determining structures, e.g. tunnels and viaducts, have been prioritized to ensure commissioning at the earliest possible time, so adequate funding was needed. The expansion of the existing lines was carried out in sections that made sense for transport, which were immediately available to customers after commissioning. Subsections included nodes Erfurt, Halle and Leipzig, new platforms and regional / suburban rail infrastructure for better access to urban areas and long-distance train stations. There will still be future upgrades on the line between Nuremberg and Ebensfeld including the node in Bamberg during ongoing operations.

CHALLENGES AND RISKS

As a result of the project execution process the following challenges and risks have been identified as critical:

Construction during train-service operation / track possession and construction planning in a highly-frequented environment

LAND ACQUISITION

-Concerns and claims from 3rd parties and agencies responsible for public issues
-Innovation
-Change orders
-Market, procurement, construction, contractual risks
-Legal and technical changes such as applicable law and procedures, norms, rules and standards, technical specifications
-Objections of third parties during permitting process and construction
-Force Majeure, i.e. floods
-Planning and design risks
-Operating and Maintenance risks
-Financing
-Human Resources
-Subsoil and environmental protection

RESULTS

After securing funds and ramping-up construction activities, the project has been completed on time and within budget (increase < 10%).

Ridership was around 1million passengers in the first 100 days of operation which is twice as many as before and a stable demand.

It will be possible for the railway undertaking in the future to complete operations on the European core corridor network without locomotive change, train stop or change of the train control system across borders (interoperability).

SUCCESS FACTORS FOR A SUSTAINABLE PROJECT DELIVERY:

-Consistent and continuous project lead over 10 years; Olaf Drescher (Technical Project Director) and Carsten Schlenczek (Commercial Project Director)
-Acceptance through early participation and proximity to the public, i.e. decentralized project locations along the routes / information events; more than 100,000 visitors at the information points
-Close and cooperative collaboration among engineering, construction and equipment companies, vehicle manufacturers, approval authorities and railway companie
-Clearly defined operational task / scope from the long term owner, operator and maintainer of the infrastructure
-Development of infrastructure based on long-term timetable concepts
-Early decisions / determinations regarding the infrastructure and vehicles necessary (inter alia, requirements due to interplay and interaction of infrastructure / superstructure and vehicle such as gravel flight, eddy current braking, and investment and maintenance costs)

ACTIVE RISK MANAGEMENT

-Realization of construction sections for the use of subsections

The VDE 8 line has proven to be a valuable addition to Germany's high-speed rail passenger service. Since opening the line between Erfurt – Halle/Leipzig in December 2015, a positive public response has been realized within 1 year with ridership growth in excess of 30% over forecasts between Erfurt – Halle/Leipzig and 40 percent over forecasts between Erfurt – Berlin.

Since opening the last section between Ebensfeld – Erfurt in December 2017, ridership on the entire line between Nuremberg and Berlin has doubled in the first 100days. Thus lead to a market share of about 40 percent compared to other transport modes such as cars, long-distance buses and air travel. Utilization of the long distance trains is 70 percent. Deutsche Bahn is planning to further increase the frequency of long-distance Sprinter and therefore capacity with better connections to the main hubs to regional and urban transport.

The U.S. Department of Transportation awarded a $29.4 million grant to the Rail Runner Express, which will help the agency complete its $60 million Positive Train Control project. The upgrades are expected to be completed by the end of 2020, which is after the U.S. DOT's deadline; however Rio Metro Regional Transit District Transportation Director Terry Doyles stated they will proceed seeking federal approval to keep operating under its current schedule until the work is completed.

The Federal Railroad Administration (FRA) awarded $203.6 million in grant funding for 28 projects in 15 states to assist with the deployment of positive train control (PTC) systems.

"Congress reached an agreement on funding the federal government through Sept. 30. The $1.3 trillion bipartisan FY18 Omnibus Appropriations bill, which President Trump signed on Friday, includes $1.94 billion for Amtrak—more than $400 million above what we received just last year! The bill provides $1.29 billion for the National Network and $650 million for the Northeast Corridor (NEC) and includes funding for various DOT competitive grant programs that will further support intercity passenger rail.

A Texas company has secured a $300 million loan to help build a high-speed rail from Dallas to Houston. Texas Central Partners said the money, which comes from Japan, will let them work on permitting, design and engineering. They plan to use Japanese bullet train technology. The company said the entire project will cost up to $15 billion and will be privately funded. The train would take just 90 minutes to get from Dallas to Houston. The proposal still needs environmental clearance.

Steer Davies Gleave, will drive private investment in the train system, which would link Las Vegas with Los Angeles and Anaheim, California, by way of Victorville and Palmdale, California. XpressWest has environmental approvals and clearances to build between Las Vegas and Victorville, primarily along the Interstate 15 corridor, and the authority recently completed environmental work on the link between Victorville and Palmdale along the new freeway route, known as the High Desert Corridor. Los Angeles Metro rail lines already exist between Anaheim, Los Angeles, Burbank and Palmdale, but high-speed designs would need to be built as a part of the California High Speed Rail project connecting Los Angeles and San Francisco.

THINK BIG ACROSS THE USA

FEDERAL FUNDING

Contributed by Jeff Boothe, President, Boothe Transit

Congress is moving closer to completing the FY19 Transportation, Housing and Urban Development (THUD) Appropriations bill by September 30, 2018. This would be a significant event since the last time that a THUD bill was completed before the start of the fiscal year was more than two decades ago.

Completion of the appropriations process is made possible by two important events. First, Congress adopting a two-year Budget Agreement in early 2018 that set the spending levels for FY19. Further, the budget agreement also provided an infusion of several billions of General Fund monies into transportation programs. Second, the efforts of Senate Appropriations Committee Chairman Richard Shelby that pushed hard to keep the Senate bill "clean" of extraneous amendments and House and Senate leadership determined to complete as many appropriations bill as possible prior to the November 2018 General Elections. The goal is to conference the bill among staff and return after Labor Day with a conference report that could be adopted by September 30, 2018.

Important to industry are the FY 19 funding levels proposed for Amtrak and several federal railroad discretionary grant programs. A comparison of the House and Senate funding for those programs is set forth below:

Program	FY 18 (millions)	House (millions)	Senate (millions)
Positive Train Control (PTC)		$10	$10
Railroad Rehabilitation and Improvement Finance (RRIF)	$25		
Consolidated Rail Infrastructure and Safety Improvements (CRISI)	$592.5	$300	$255
State of Good Repair Grants	$250	$500	$300
Restoration and Enhancement Grants	$20		$10
AMTRAK	$1,941.6	$1,941.6	$1,941.6
(Northeast Corridor)	($650)	($650)	($650)
(National Network Grants)	($1,291.6)	($1,291.6))	($1,291.6)

At the same time that funding will experience robust levels again in FY19, Richard Anderson, President and CEO of AMTRAK, announced in June 2018, that AMTRAK was contemplating suspending AMTRAK service between Dodge City, Iowa and Albuquerque, New Mexico and replacing train service with charter buses as a cost saving measure. AMTRAK explains that this is precipitated by the repair and upgrades necessary for the track since there is no longer freight service on that stretch of track. Further, there is no Positive Train Control (PTC) for several sections of the track and, with deadlines looming on PTC compliance, AMTRAK may be using the loss of service to pressure the states to provide funding for track improvements including PTC for the segments that not operated by BNSF.

The Federal Railroad Administration (FRA) did publish a Notice of Funding Opportunity (NOFO) on May 18, 2018 announcing the availability of $250 million in funding for PTC from the Consolidated Rail Infrastructure and Safety Improvement (CRISI) program with $62.5 million set aside for rural areas. Announcement of grant awards are expected in Fall 2018. FRA is expecting that grant recipients will fully implement PTC on all required route miles by December 31, 2018 unless a waiver is requested and an alternative schedule is provided to FRA.

Looking to the future, the 116th Congress will face numerous challenges that threaten the completion of the FY 20 and FY 21 appropriations processes and surface transportation authorization. Early in the First Session, Congress must enact another two-year budget agreement for FY20 and FY21. This will be increasingly difficult given rising budget deficits and concerns over rising interest rates raising the cost of funding the National Debt that as caused by the President's Tax Cut and the FY18 and FY19 spending agreement that used General Funds to boost spending.

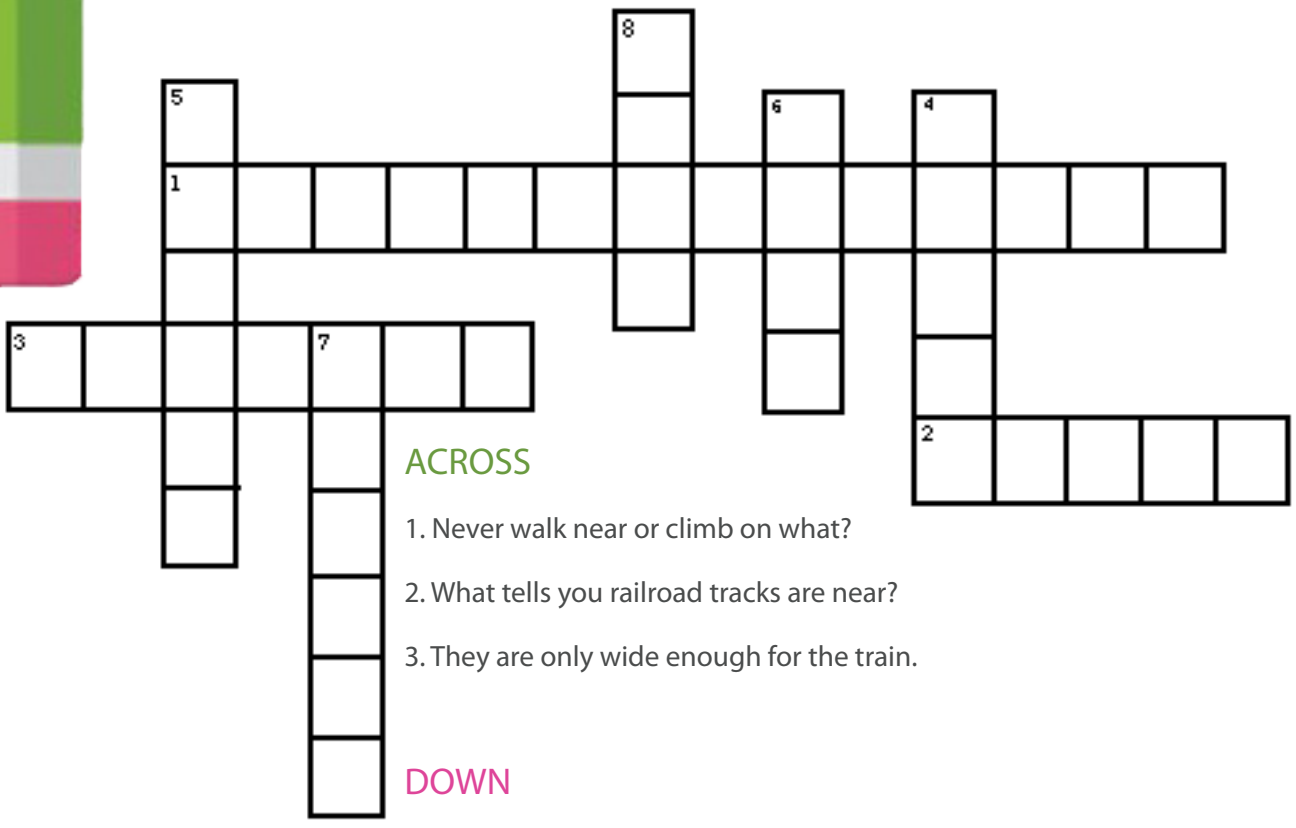
It is well known that the current gasoline tax is inadequate to sustain current surface transportation spending levels. The Fixing America's Surface Transportation (FAST) Act relied on more than $55 billion in General Funds to ensure spending increase of approximately 3 percent annually. Continued use of General Funds is no longer viable in light of overall spending increases. This necessitates Congress demonstrating leadership to secure a sustainable funding sources for surface transportation that recognizes that the gasoline tax has not kept pace with inflation or the state of good repair of the nation's surface transportation system.

House Transportation and infrastructure Committee Chairman Bill Shuster introduced an Infrastructure proposal on July 23, 2018 that proposed several changes to fund the surface transportation program. Notable among the proposals are the following:

- Creation of a Highway Trust Fund Commission that is directed to submit a report to Congress that includes recommendations to achieve the long-term solvency of the HTF and the corresponding legislation required to enact those recommendations with a provision that allows for expedited consideration of the legislation by Congress.
- Increases in the gasoline tax by 15 cents and the diesel tax by 20 cents to be phased in over three years and then at the end of three years the fees are indexed to inflation.
- Eliminates the reduced fee for fuel used for intracity and intercity buses.
- Reinstates the 4.3 cents per gallon fee on diesel fuel used by commuter rail trains and indexes the fee to inflation.
- Establishes a ten percent user fee on the wholesale price of electric batteries.
- Establishes a ten percent user fee on the wholesale price for bicycle tires used on adult bicycles.

While the Shuster bill is unlikely to advance beyond committee hearings in the 115th Congress, it is intended to stimulate debate in Congress regarding the future of surface transportation funding. Failure to act by Summer 2020 will result in the insolvency of the Highway Trust Fund requiring spending cuts. Exacerbating the challenge is the fact that fuel efficiency improves and an increasing number of vehicles are battery powered and don't pay into the federal HTF at all. Efforts to adopt alternative mechanisms to capture revenue, such as vehicle miles travelled fee, have met resistance due to concerns over personal privacy and the establishing the collection mechanism in all fifty states.

ENJOY PUZZLES



ACROSS

1. Never walk near or climb on what?
2. What tells you railroad tracks are near?
3. They are only wide enough for the train.

DOWN

4. Never drive or walk around the crossing when they are down.
5. What can you expect to see on a railroad track?
6. What you should do if you can hear the train whistle. (----), Look and Listen.
7. If your car stops on the tracks, you should do this and run away!
8. Trains can't stop quickly, so never do this around tracks.

Ready to solve some crossword clues?

IN THE SPOTLIGHT

YOU SHOULD GET TO KNOW US

SHANNON SIMONDS
SENIOR PLANNER

"California is working to be a leader in rail planning, project development, and harnessing technology to deliver a clean, convenient, and reliable system that will help us meet the state's transportation goals. I'm excited that our vision for an integrated rail network will improve rail service, transit connectivity, and multi-modal station access to fundamentally transform how people move around the state and interact with their communities."

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)

DIVISION OF RAIL & MASS TRANSPORTATION

CARSTEN PULS
PRESIDENT AND CHIEF EXECUTIVE OFFICER

"A recent study by APTA shows that public transportation use is growing at a faster rate than population growth and highway use in North America. As one of the largest operators of integrated multimodal transportation networks, Deutsche Bahn believes it is uniquely qualified to support this growth in all areas of planning, building, operating, maintaining and transforming passenger rail transportation networks in America."

DB ENGINEERING & CONSULTING USA, INC

MICHAEL MCLAUGHLIN
CHIEF OF RAIL TRANSPORTATION

"The Virginia Department of Rail and Public Transportation (DRPT) plays an active role in statewide rail planning for both passenger and freight service. DRPT is involved in several planning initiatives to improve passenger rail service in the Commonwealth by increasing system capacity, expanding service offerings and adding stations where warranted. I am delighted I can take what I have learned in Chicago and apply it to system integration in Virginia."

VIRGINIA DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION

CALIFORNIA

STATE RAIL PLAN: SETTING A STANDARD FOR SERVICE INTEGRATION

Contributed by: Shannon Simonds, Caltrans

California is home to 40 million people and is projected to grow to 50 million by 2040. To stay at the forefront of economic, environmental, technological, and cultural advancements, California must invest in and build a high-performance statewide transportation system accommodating all our needs. Increasing investment in commuter, intercity, and high-speed passenger rail systems is an important component of Caltrans' overall strategy for developing the transportation system and providing options for travel that are consistent with state greenhouse gas (GHG) emissions and vehicle miles traveled (VMT) reduction goals.

California State Rail Plan Vision Statement

California will have a premier, customer-focused, integrated rail system that successfully moves people and products while enhancing economic growth and quality of life.

The recently released California State Rail Plan (Rail Plan) details the state's framework for investing in and integrating California's rail network. The Rail Plan is a strategic planning document that identifies a long-term vision and goals to guide incremental planning and funding decisions that support, or at least do not preclude, development of an integrated state network and a viable, convenient travel option for local, regional and interregional trips. It establishes a vision for improving passenger and freight rail, and multimodal connectivity. The passenger rail vision will create a coordinated, statewide travel system to enhance multimodal access for residents across the state. The vision will allow people to:

- Travel seamlessly across urban, suburban, and rural areas of the state with more trains to more places more often;
- Glide past traffic congestion on reliable trains and express buses in dedicated lanes;
- Save time with significantly faster trips;
- Enjoy the journey on modern, safe, clean, and comfortable trains;
- Transfer quickly and easily at hub stations with coordinated arrivals and departures that significantly reduce wait times;
- And plan an entire door-to-door trip and purchase a single ticket using a streamlined trip-planning portal.

The Rail Plan reflects total statewide investment by the state, regions and individual operators that can be integrated as part of a statewide network and make intercity rail a viable and convenient option for travel across the state. It leverages investments in California High-Speed Rail (HSR) by integrating intercity and regional services to provide connections that can deliver auto and air competitive door-to-door trips using coordinated schedules and connectivity hubs. These hubs provide connection points to local and regional transit systems providing fast, frequent access to regional destinations and expanding the coverage of the state rail network. In this way, the Rail Plan makes it possible for people to drive less.

Rail ridership alone will increase more than 10-fold as part of the Rail Plan Vision, with passenger miles growing more than 20-fold due to longer average journeys. Many of the rail journeys will connect California's growing transit systems as part of the beginning and/or end of the trip, providing additional ridership that will contribute to Caltrans' own strategic goal of doubling transit trips. Therefore, the integrated rail and transit network in California is expected to achieve a world-class 15-20 percent share of all passenger miles in California by 2040 – up from around 6 percent currently.

The increased rail and transit mode share will also yield significant safety benefits. Already, risk to injury and death is 17 times lower when traveling by intercity rail than by automobile, and even lower on high-speed trains. Of the projected growth in VMT over the next twenty years, 74 million daily VMT will be diverted from

The CP1 construction area is a 32-mile stretch between Avenue 19 in Madera County to East American Avenue in Fresno County, including major work elements in Downtown Fresno. It includes 12 roadway / railroad grade separations, 2 mainline viaducts, 1 tunnel, realignments of existing railroad tracks, utility relocations, roadway relocations, 2 trench sections, and a major river crossing over the San Joaquin River.

The first major construction within CP 1 began in summer 2015 at the Fresno River Viaduct in Madera County and the work now largely complete. This structure is approximately 1,600 feet long and will serve as the northern gateway to the city of Fresno, carrying high-speed trains over the Fresno River and State Route 145.

highways to rail and can, therefore, potentially eliminate 19,000 transportation related injuries.

The state will see environmental benefits from the significant mode shift from highway to rail as well. The Rail Plan vision projects 88 million daily passenger miles diverted to rail from highways, which is the equivalent of eliminating more than 13 million metric tons of carbon dioxide equivalence annually. Additionally, a majority of the passenger miles of travel on rail will take place on electrified trains in California, further eliminating the impact to the planet.

Beyond the many associated benefits of the plan, the California State Rail Plan itself is a first-of-its-kind plan that details a network integration framework that will guide planning and investments for the next 20 years and beyond. The new, ambitious network integration feature included a market analysis using California High-Speed Rail Authority modeling resources, a review and analysis of the state's infrastructure and constraints, and an operational analysis of a network based on synchronized schedules between services allowing for fast, convenient transfers at hub stations on a network. This network integration process also acted as a tool for communicating and reaching consensus on the vision with rail operating partners across the state which helped to create necessary coordination processes for investing in and delivering the vision.

Another important component of this Rail Plan that distinguishes it from other rail planning efforts are the specific service and connectivity goals identified for delivering the vision. These geographic- and time-specific goals have already guided agencies' applications for various state and federal funding programs like the Transit and Intercity Rail Capital Program (TIRCP) and the Consolidated Rail Infrastructure and Safety Improvement (CRISI) grants. Those funding programs alone have generated over $2.8 billion in the awards made this year directly to improvements and network planning supporting the Rail Plan. The Rail Plan will continue to provide a path to guide applicants towards projects that will serve their regions and support statewide connectivity. It is also providing the framework for the state and local and regional partners to coordinate grant applications, planning, and project delivery to avoid duplications and deliver an integrated network as efficiently as possible. For more information, please read the California State Rail Plan: www.californiastaterailplan.com

CALIFORNIA'S HSR UPDATES

Contributed By: Micah Flores, Public Information Officer, California High-Speed Rail Authority

THE ENTIRE 800-MILE LINE IS SCHEDULED FOR COMPLETION BY 2033.

During the worst economic recession since the Great Depression of the 1930s, the U.S. passed the American Recovery and Reinvestment Act of 2009 (ARRA), an economic stimulus package designed to generate job growth through infrastructure investment.

Along with supporting near-term investments—like road repairs, bridges and airport facilities—ARRA funds supported early investments into the California High-Speed Rail Program, a visionary transportation infrastructure system aimed at connecting the state's megaregions while bolstering longer-term economic and clean energy goals.

California received $2.55 billion in ARRA funds and combined it with other state and federal funds to begin construction (including strategic investments in local and regional rail lines) on a high-speed rail system approved by California voters in 2008. The state met the strict requirement to fully invest all ARRA funds by Sept. 30, 2017, drawing in hundreds of private sector firms—including small and disadvantaged businesses—to begin work on the nation's first high-speed rail system.

Setting into motion one of the largest public infrastructure projects in the country, the investment created thousands of well-paying jobs, infusing the state's economy with billions in economic activity.

When Phase 1 of the system is complete, it will run from San Francisco/Merced through the Central Valley to Los Angeles/Anaheim in under three hours at speeds capable of exceeding 200 mph, compared to a car trip of at least six and a half hours in the best traffic. The system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations.

CONSTRUCTION PROGRESS: IT'S HAPPENING

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

Construction Package 1 (CP 1), the first significant construction contract executed on the high-speed rail program, stretches 32 miles within Madera County and Fresno County.

Major structures have been erected, with several nearing completion.

The first major construction within CP 1 began in summer 2015 at the Fresno River Viaduct in Madera County. That work is now largely complete. This structure is approximately 1,600 feet long and will serve as the northern gateway to the city of Fresno, carrying high-speed trains over the Fresno River and State Route 145.

Construction continues at the San Joaquin River Viaduct and Pergola, a 4,740 foot long structure that will span the San Joaquin River in north Fresno and the Union Pacific tracks parallel to State Route 99 (SR 99). The viaduct will feature arches representing the northern gateway into Fresno, forming one of the largest structures on this first phase of the high-speed rail project. It will also feature a pergola structure in order to cross over the top of the Union Pacific tracks. Workers have completed concrete pours for much of the pergola deck, and on the south bank of the San Joaquin River crews are finishing up construction of the remaining support columns.

The Cedar Viaduct in the southern part of Fresno is currently in nearly every stage of construction. The 3,700 foot structure (one of the largest structures on CP 1) will serve as the southern gateway to the city. Its construction is expected to last through 2018. Crews have been working day and night to extend the structure across SR 99. Presently, concrete support piers are being constructed on either side of the highway and in the highway median as well. Drill shafts have been poured and column work is beginning.

The first section of the alignment to go below ground is the Fresno Trench and State Route 180 Passageway, a two-mile trench through central Fresno — traveling under State Route 180 (SR 180), a railroad spur, and a canal. Drilling rigs are boring foundations for the trench barrier walls that will separate high-speed trains from the adjacent freight trains.

Nearly 40 pre-cast concrete girders were placed over a section of the Fresno Trench over two days in August, while closer to SR 180, work continues on a drainage structure that will relocate a 60-inch storm sewer line to the north side of the highway. Crews have approximately 15 feet more to excavate before they reach the bottom of the trench where a concrete box will be constructed that will carry the trains under SR 180.

Also as part of CP 1, the SR 99 Realignment project — a nearly complete $300-million project in which Caltrans served as the contactor — involved moving a significant stretch of SR 99 in Fresno approximately 100 feet to the west to make way for the high-speed rail line.

Construction Package 2-3 (CP 2-3), the second significant construction contract to be executed in the Central Valley, extends approximately 65 miles south of the terminus of CP 1 in Fresno, to one mile north of the Tulare-Kern County line. CP 2-3 will include approximately 36 grade separations — viaducts, underpasses and overpasses — in the counties of Fresno, Tulare and Kings.

The Dragados-Flatiron Joint Venture (DFJV) Pre-Cast Facility is where girders and pre-cast slabs are being manufactured, allowing DFJV to make as many as eight girders at a time, thereby expediting the bridge-making process in CP 2-3. The facility will ultimately make around 1,300 different kinds of beams and almost half a million pre-cast slabs.

Meanwhile, construction of overpasses are well underway in CP 2-3 in Fresno and Tulare Counties where crews have carried out geotechnical and demolition projects — including embankment fill and utility relocations. In Kings County, construction has begun on another two new overcrossings — one at Flint Avenue and one at Fargo Avenue east of SR 43 just outside of Hanford where about 49 trucks per hour are hauling approximately 56,000 cubic yards of earth per day to build up the embankment.

Construction Package 4, the final construction contract, extends 22 miles south of CP 2-3. Major activities underway include utility relocation, clearing and grubbing, and geotechnical testing at Garces Highway in Kern County, where crews are testing the soil conditions and beginning foundation work for future construction of a viaduct that will carry high-speed trains over the highway.

2018 BUSINESS PLAN—KEY ASPECTS

As bridges and viaducts continue to rise towards the sky at multiple Central Valley sites, the CHSRA's recently released 2018 Business Plan highlights the future system's path forward, including steps to initiate high-speed rail service as soon as possible. By making strategic, concurrent investments to be linked over time, CHSRA will work to construct additional segments as funding becomes available.

The plan lays out an implementation strategy focused on meeting ARRA commitments by constructing the 119-mile segment and completing the environmental review for all project segments statewide by 2022. The plan also calls for extending the Silicon Valley to the Central Valley Line. Running from San Francisco to Bakersfield, this line would generate the highest ridership and revenue.

By investing funds to develop 224 miles of high-speed-rail-ready infrastructure on these two lines, the system would see early benefits by reducing travel times on existing passenger rail systems, expanding clean electrified rail service and preparing for testing and potential high-speed rail operations in these two corridors by 2026-2027.

Additional next steps include completing project development work to refine the design, scope and cost for the Pacheco Pass tunnels (between Gilroy and Madera) and the extension to Merced, critical links between the Central Valley and the Silicon Valley. CHSRA is additionally completing important early work—such as geotechnical analysis—to reduce uncertainty and further "de-risk" the construction of

A crane sets pre-cast concrete girders over the northern section of the Fresno Trench, near downtown Fresno. Nearly 40 girders were placed over two days in August, while closer to State Route 180 (SR 180), work continued on a drainage structure that will relocate a 60-inch storm sewer line to the north side of the highway. - August 2018

the tunnels. CHSRA will also continue to engage private and public-sector expertise to examine and refine design options, thereby optimizing operational efficiencies and limiting costs.

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

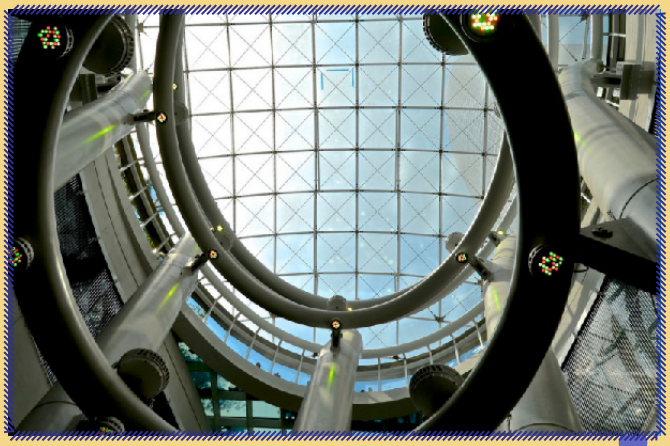
CHSRA will also continue to leverage state funding committed to the project to pursue additional federal, state and private funding or financing to invest in the development of the high-speed rail system statewide.

OTHER RECENT DEVELOPMENTS

CHSRA selected Brian Kelly as its chief executive officer, a position he settled into on Feb. 1. Prior to taking the helm, Kelly—widely considered the state's top transportation policy executive—served as Gov. Edmund G. Brown Jr.'s transportation czar, leading the California State Transportation Agency.

A recent strategic partnership with DB Engineering & Consulting USA, a private sector operator, is another important development as the CHSRA looks to ensure that the system is designed to enhance ultimate commercial value and profitability.

With active construction sites, more than 2,200 laborers at work, millions invested in small businesses and a business plan to pull it all together, the state's high-speed rail program is far from an idea; it's a reality that is connecting and transforming California.



West Coast "High Line" with future High-Speed travel. The $2.16 billion Transbay Transit Center opened to the public on August 11, with bus service launching on August 12.

TIMELINE

1990 – French TGV broke speed record for electric trains with a speed of 515km/h
1991 – Congress passes the Intermodal Surface Transportation Efficiency Act (ISTEA), calling for the selection of not more than five corridors to be designated as high-speed rail corridors.
1991 – Tohoki and Joetsu Shinkansen lines extended to Tokyo Station
1991 – German Hannover-Wurzburg: Mannheim-Stuttgart, speed of 250 – 280 km/h
1992 – Spanish introduce AVE high-speed trains: Madrid-Seville max. speed – 250 km/h – current max. speed 300 km/h
1992 – FRA designates the five high-speed rail corridors required in ISTEA:
Midwest – Chicago, Detroit, St. Louis, and Milwaukee / Florida – Miami, Orlando and Tampa
California – S an Diego, Los Angeles, Bay Area, and Sacramento / Southeast – Charlotte, Richmond, and Washington, D.C. / Pacific Northwest – Eugene, Portland, Seattle, and Vancouver
1997 – FRA submits the High-Speed Ground Transportation Commercial Feasibility Study Report to Congress examining the economics of bringing high-speed ground transportation to well-populated areas throughout the U.S.
1997 – Hokuriko (Nagano) Shinkansen begins service between Takaskai and Nagano
1997 – Belgium inaugurates high-speed passenger rail service
1998 – Construction begins on Kagoshim route of the Kyushu Shinkansen
1998 – 1999 – The Transportation Equity Act for the 21st Century (TEA-21) authorized six additional high-speed rail corridors:
Gulf Coast / Keystone – Philadelphia to Harrisburg / Empire State – New York, Albany, Buffalo
Extension of Southeast corridor – Charlotte, Greenville, Atlanta, Macon, Raleigh, Columbia, Savannah, and Jacksonville
Extension of Midwest corridor – Milwaukee to Minneapolis/St. Paul, Indianapolis and Cincinnati, and authorized $250,000 per year for improvements on the Minneapolis / Chicago segment
1999 – Yamagata Shinkansen extended to Shinjo
2000 – USDOT designates two new high-speed corridors and approves extension of four previously designated corridors:
North New England – Boston, Portland/Auburn, Montreal
South Central – Dallas / Ft. Worth, Austin, San Antonia, Oklahoma City, Tulsa, Texarkana, and Little Rock
Southeast corridor – Macon to Jesup
Gulf Coast corridor – Birmingham to Atlanta
Keystone corridor – Harrisburg to Pittsburgh
Midwest – Chicago to Toledo, Cleveland, Indianapolis to Louisville, and Cleveland to Indianapolis, Louisville, Cleveland, Columbus, Dayton, and Cincinnati
2001 – FRA approves Midwest corridor from St. Louis to Kansas City
2002 – Tohuku Shinkansen extended to Hachinohe
2003 – United Kingdom inaugurates HS1 – Paris – Lille-London
2004 – South Korea launches KTK high-speed rail service
2004 – Kyushu Shinkansen service begins between Yashio and Kagoshima
2004 – Consolidated appropriation act of 2005 extends Northern New England high-speed corridor from Boston to Springfield, Albany, Springfield, and New Haven
2007 – Spain begins revenue service on its first high-speed train: max. speed 350 km/h: Madrid to Barcelona; Cordoba to Malaga; and, Madrid to Valladolid

2007 – World high-speed train record of 574 km/h set in France
2007 Taiwan inaugurates high-speed passenger rail service
2008 – China inaugurates high-speed passenger rail service
2008 – Congress passes the Passenger Rail Investment and Improvement Act (PRIIA) of 2008 establishing the initial framework for developing America's high-speed rail corridors
2009 – Congress passes the American Recovery and Reinvestment Act (ARRA) allocating $8 billion to be granted to states for intercity rail projects
2009 – California high-speed rail corridor extended to Las Vegas
2009 – European high-speed rail service extended from the Netherlands to Turkey
2010 – Tohoku Shinkansen service extended to Aomori
2010 – Madrid-Valencia/Alicante operating at 300 km/h
2011 – USDOT designates the Northeast Corridor (NEC), and Congress appropriates $11 billion to advance high-speed and improved intercity passenger rail service. Ultimately the FRA funded 75 projects in California, the NEC, the Midwest, and numerous other locations around the U.S.
2011 – Kyushu Shinkansen service extended to Fukuoka
2012 – Construction begins on Nagasaki extension of the Kyushu Shinkansen
2014 – Tokaido Shinkansen celebrates 50th anniversary
2015 – Tohoku Shinkansen reaches record speed of 300 km/h
2015 – More than 30,000 kilometers of high-speed rail lines are operating throughout the world, 3,603 high-speed train sets in operation; and, 1.6 billion passengers per year carried high-speed trains in the world, with an 80% split between high-sped train ridership vs. air transport when travel time by train is less than 2.5 hours
2015 -- European Union approved €25 for the Turin–Lyon high-speed railway connecting the French and Italian networks, and provide a link with Slovenia
2016 – Hokkaido Shinkansen begins service between Amari and Hakadate
2018 – Brightline begins revenue service between Miami and Orlando operating at 80 mph
2018 – Washington state launches study of high-speed service between Seattle and Vancouver, BC
2018 – China celebrates a decade of progress implementing HSR, completing and putting into service 25,000 KM of HSR
2025 – China's HSR network is expected to reach over 38,000 km, and 45,000 km in the longer term, far more rail lines than in the rest of the world combined
2029 – California anticipates opening the first phase of its high-speed system connecting San Francisco to Los Angeles and Anaheim

OUR FUTURE AWAITS US...

FOR OVER 140 YEARS, EFFORT HAS BEEN UNDERWAY TO INVENT, INTRODUCE, OPERATE AND EVOLVE PASSENGER RAIL SERVICE AROUND THE WORLD. IN SPEEDLINES - ISSUE 23, THE TIMELINE FOR DEVELOPMENT STRETCHED FROM THE BEGINNING IN 1830 TO 1990. IN THIS EDITION OF SPEEDLINES, THE TIMELINE FROM 1990 INTO THE FUTURE IS PRESENTED.

SOUTHWEST CHIEF

CANARY IN THE COAL MINE?

Contributed by: Sean Jeans-Gail, Vice President of Policy & Government Affairs for the Rail Passengers Association

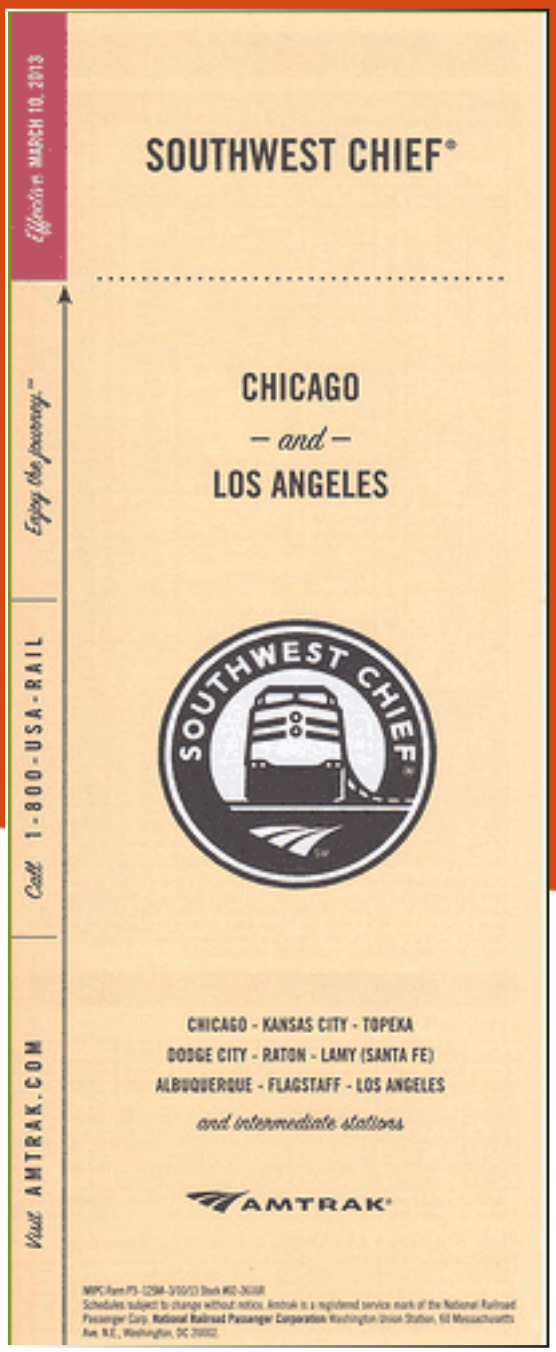
Looking back, we'll likely see September as an inflection point.

At the time of this writing, Congressional conferees are reconciling differences between the House and Senate versions of the FY 2019 transportation budget—including whether to retain language preventing Amtrak from breaking up the Southwest Chief with a 12-plus hour bus "bridge." These negotiations will shape not only the next 12 months of transportation spending and the kind of service enjoyed by the 14.5 million people along the Chief's route, but the future of the national passenger rail network.

While it may sound like a grandiose claim, just look at the facts. Despite last year's spike in federal investment in passenger rail (modest by industry standards), Amtrak faces north of $117 billion in capital needs to return the Northeast Corridor to a state-of-good repair and reach international-caliber trip times. That doesn't touch on the billions needed to replace the rapidly aging National Network equipment fleet. That also doesn't touch on the Southwest, Southeast, and Midwest regional rail studies just completed by the Federal Railroad Administration, each of which outlines multi-decade, $50 billion-plus corridor development projects. The investment needs are mounting, and the funding sources remain stubbornly stagnant—and might even be contracting, if Congressional appropriators are to be believed.

With the FAST Act set to expire at the end of the next year, authorizing committees are already looking to develop a replacement surface transportation bill. But rather than putting forth bold new programs to modernize rail in the U.S.—with the dedicated sources of funding that would require—these authorizers are frank about being overwhelmed by the (far-from-simple) task of avoiding a fiscal catastrophe for the Highway and Mass Transit Trust Fund.

In his short tenure as Amtrak's CEO, Richard Anderson has made it clear that—in the absence of a legislative solution—he is willing to make dramatic changes to the status quo on a unilateral basis, transforming the Amtrak system to a model he believes is more sustainable. Changes that have been considered include but are not limited to: pulling out of regions where capital requirements are high (not the NEC, of course); replacing daily long-distance trains with thrice-weekly frequencies, allowing for the reallocation of equipment to create higher-frequency, sub400-mile services; and refocusing resources to high-population urban corridors. While the Rail Passengers Association (RPA) agrees with some of these proposals, many of these "fixes" would eliminate service to millions of Americans and are simply unacceptable to our coalition.



We're not alone, apparently. A recent Trains magazine article found that if you uniformly applied Amtrak's requirement to provide Positive Train Control on a Southwest Chief segment that the Federal Railroad Administration deemed PTC-exempt, it would end train service for sizable segments on the Cardinal, California Zephyr, Texas Eagle, Downeaster, Vermonter, Ethan Allen, and City of New Orleans. Amtrak has denied any intent to end train service on these routes. But the fact remains: the case Amtrak has made for fragmenting the Chief applies to a half dozen other routes, so why stop there?

That is why RPA has viewed the Southwest Chief as a "canary in the coal mine" issue, and why our coalition has focused so intently on supporting the amendment offered by Senators Moran and Udall, which would prohibit Amtrak from altering or degrading service on the route in FY 2019 (if not by name, then by route characteristics). We have a chance to set a marker on what kind of public entity we want Amtrak to be: a product for city dwellers, or a service for all Americans.

As of this writing, the Southwest Chief's prospects look promising—but by no means assured. Rail Passengers has heard from our allies on the Hill that the noise our advocates are making is changing hearts and minds—perhaps even in Amtrak's management.

All that really means, however, is that the public will have an opportunity to have a debate about what kind of rail network America will have. It's time for our entire industry to think hard about what that network should look like, and what our country is willing to invest. As much as we've disagreed with Mr. Anderson on the Southwest Chief, he's decidedly correct about the central fact: the current model is unsustainable, and something has to change.

NATIONAL INTERCITY PASSENGER RAIL POLICY

SHOULD THE USA EVEN HAVE ONE?

Contributed by: Eric Peterson

About a year ago a website called Quora presented an article titled, "Why doesn't the United States have high-speed bullet trains like Europe and Asia?" In the article, the author rationalized that there were a series of conditions that weighed against the U.S. having a robust network of passenger rail service including:

- Population density or lack thereof;
- Our unique model of urban and suburban development;
- The strength of our property rights;
- Car culture, or America's lingering obsession with the automobile;
- The lasting power of network effects; and,
- An existing rail network is geared towards long-haul commercial freight traffic.

That said, the author went on to note, "I am a natural optimist and I believe that America will ultimately figure out how to utilize certain emerging technologies to overcome the obstacles to implementing efficient, environmentally friendly and safe transportation for the masses. I do believe high-speed rail in some form will ultimately be part of this solution."

We share the author's optimism, but we think the issue is not just because of these conditions. We think it's because the United States lacks a national policy that effectively would or could mitigate these conditions.

In 2008, two important pieces of legislation affecting the future direction of America's rail industry, including passenger rail, were enacted: The Passenger Rail Investment and Improvement Act (PRIIA), and the Rail Safety Improvement Act (RSIA).

According to testimony delivered to Congress in 2013 by then Federal Railroad Administration (FRA) administrator, Joe Szabo – as the previous administration was laying the groundwork for what ultimately became the FAST Act – the administration identified five priorities that it claimed were the foundation for its future rail policy, but none of them directly addressed establishing a national passenger rail policy. Those priorities were:

1. Enhancing world class rail safety;
2. Modernizing the nation's rail infrastructure;
3. Meeting growing market demand;
4. Promoting innovation; and,
5. Ensuring transparency and accountability.

If one can take anything from the testimony and its stated priorities, it is that the previous administration preferred policy would have been to perpetuate a national scheme in which passenger trains and freight trains would continue to share the same tracks; in which host railroads would be encouraged to "play nice" with other service providers accessing their tracks; in which a stable, sustainable funding source would be created for the purposes of building and maintaining railroad infrastructure and buying and maintaining equipment; and, in which more of the responsibility for oversight of the nation's rail system would be delegated to the states and to regional organizations. Left unsaid was just how all of this was going to actually work and/or how an actual national policy would evolve from these stated priorities.

One of the biggest challenges currently facing passenger rail service providers is on-time

performance. Under present law Amtrak is charged with monitoring and reporting on-time performance. But recent court rulings have determined that Amtrak is not a regulatory agency and therefore has no power to either monitor or to enforce on-time performance standards on host railroads.

A second major challenge facing passenger rail service providers is the matter of having a dependable, sustainable funding source, or even a financing source sufficient to address all of the infrastructure and equipment requirements of a modern, reliable, efficiently operated passenger rail system. The one-time major boost to the improvement of America's passenger rail system came in the American Reinvestment and Recovery Act (ARRA) of 2010, and once the partisan make-up of the congress changed rescissions were enacted on a portion of that funding, and the congress has never appropriated a meaningful sum to the rebuilding effort to date, except for a few Amtrak projects in the Northeast Corridor (NEC), some loosening of federal credit programs to finance certain equipment procurements, and modification of TIGER and INFRA guidelines allowing states and other eligible applicants to compete for grants that could be used to make multi-modal improvements that benefit discrete rail projects.

Writing in a recent Global Railway Review, Richard Harnish, executive director of the Midwest High-Speed Rail Association, observed that, "High-speed rail can happen in the United States, but it cannot be built as stand-alone lines only connecting big-city downtowns. It must be planned and built as a phased-network system that connects suburbs, small towns, metropolitan central business districts and hub airports into a fast, convenient accessible, high-volume mobility system."

Similarly, the state of California just released its 2018 California State Rail Plan. The plan, which is the first and most comprehensive state plan offered since states were required to produce such documents by 2011 under PRIIA, offers a vision and strategic "framework for a safe, sustainable, integrated, and efficient California rail network that successfully moves people and goods while enhancing the state's economy and livability."

Other states, under a renewed mandate set forth the FAST Act are expected to offer their state plans in the near term, but industry insiders suggest that none

of those plans will be a comprehensive and integrated as the California plan.

That said, it is clear that while having a plan is a step in the right direction, having a national policy that commits to a long-term investment and the actual fulfillment of a national priority is essential to ensuring that America will, at some point in the not-too-distant future achieve the doable and provide a reliable, efficient, environmentally friendly and safe mobility alternative to the government subsidized transportation modes of the 20th Century.

While many in the United States take a "not invented here" approach to learning from others' experience, the truth of the matter is that the Europeans, the Japanese, the Chinese and many others put in place decades ago national policies that established as a high national priority the creation and advancement of intercity and high-speed passenger rail networks. Japan adopted their policy in the 1930s, the Europeans' policy came about with the creation of the European Union, and others have incorporated their national rail policies as part of their economic development and trade policies.

The United States is facing dramatic population growth in the next twenty to thirty years. There is no way that the highways and airways of our nation can adequately or safely handle the volume of demand that growth will generate. It's time for America to adopt a national intercity passenger rail plan that promotes and supports a mobility alternative for the 21st century.

HONG KONG

Although geographic neighbours, Hong Kong and Mainland China have never had a high-speed rail connection. Stretching 15,500 miles, China's "bullet train" network is already the largest in the world. Guangzhou Shenzhen Hong Kong Express Rail Link will be officially taken into operation on September 23rd, 2018.

OTTAWA

This 7.8 mile rail link known as O-train-Confederation Line will extend below downtown (1.6 miles of which are in tunnel). The project includes 13 new stations, 3 of which are underground. and will be funded jointly by the Government of Canada, the province of Ontario and the City of Ottawa.

AMSTERDAM

After over 15 years since construction, the Amsterdam North-South Line was finally inaugurated on July 21, 2018. Served by Alstom Series M5 metro trains running every 6 minutes, trip time 16 minutes from each point between 8 new stations, transporting over 250,000 people a day.

MOROCCO

Morocco will have the fastest train in Africa. To keep pace with rapid urbanisation, Morocco is actively expanding its public transport system, including the flagship Tangier-Casablanca high-speed rail line. The French-made double-decker TGVs can reach speeds of 200 miles per hour.

BUENOS AIRES

Ministry of Transport has launched an international tender for a contract to supply 1500 EMU cars for the Buenos Aires RER network, which will bring high-frequency services to suburban lines in the capital. Deliveries will begin in the second half of 2020 and are due to be completed in 2023, more than doubling the fleet of 1346 vehicles currently in service on the Buenos Aires suburban network.

LONDON

The Elizabeth line will stretch more than 60 miles from Reading and Heathrow in the west through central tunnels across to Shenfield and Abbey Wood in the east. The new high-capacity trains are designed to serve the Elizabeth line when it launches in autumn 2019.

VIRGINIA MOVING FORWARD

PASSENGER RAIL PROJECTS – WITH FREIGHT RAIL SUPPORT

Contributed by: Michael McLaughlin, Virginia Department of Rail and Public Transportation

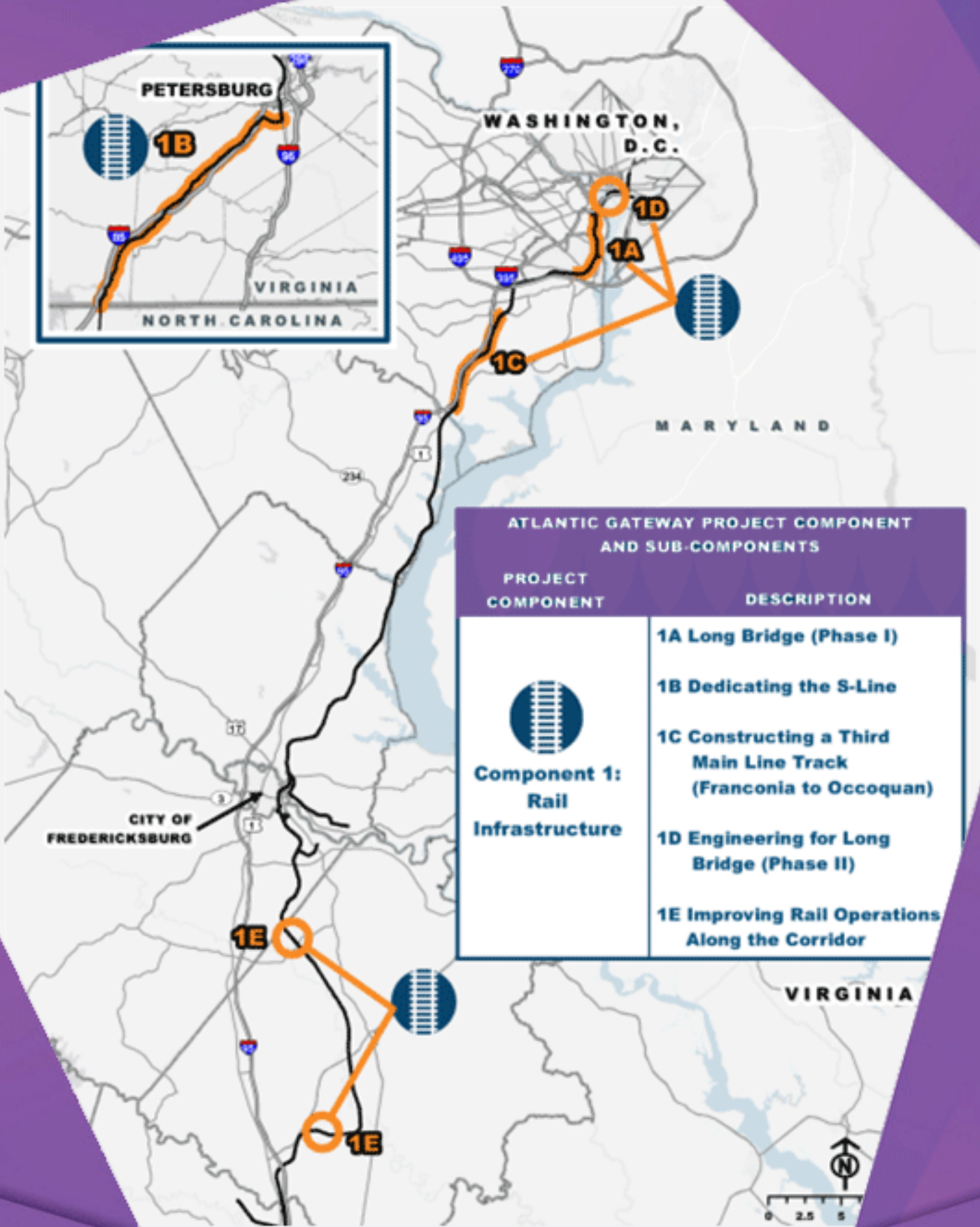
Most people in the passenger rail industry are familiar with the Northeast Corridor (NEC) that runs from Washington, DC to Boston. It is unarguably the most successful intercity passenger rail system in the U.S., carrying 800,000 rail trips a day in 8 states.

But for various reasons the NEC has a hard stop at Washington, DC's Union Station. Therefore the NEC does not cover 2.7 million people living on the other side of the Potomac in the Northern Virginia Suburbs and points further south, such as Richmond 90 miles away with another 1.3 million (and growing) populace. Northern Virginia is growing at a rapid pace, as the population growth in the region is the highest in the Commonwealth and in some cases the highest in the country. Places like Fairfax County has grown by 60,000 people since 2010, and Loudon County, the fastest growing county in Virginia, has grown by 84,000 residents since 2010, a 27% increase. Falls Church grew 5% in one year from 2016 to 2017, the most of any jurisdiction in the US over 10,000 people.

The story is the same in Alexandria, Prince William County, Stafford County and on down to Richmond. Richmond and Northern Virginia are growing so fast that it is just a matter of time before it will be difficult to discern the DC suburbs from the Richmond suburbs. So while this growth is good for the Virginia economy that means that bad traffic congestion has gotten worse… which leads to - "Why can't there be better train service that gets me into DC and onto the Northeast Corridor?"

Well, there are a myriad of reasons why the NEC does not extend further south, and while the Commonwealth of Virginia is not looking to extend the NEC and electrify the lines south out of DC, it is moving forward planning and design to improve passenger rail service in Virginia and into DC. The Virginia Department of Rail and Public Transportation (DRPT) is leading efforts to add rail track in Northern Virginia that could remove rail bottlenecks and improve the flow of intercity Amtrak and Virginia Railway Express (VRE) commuter trains into DC's Union Station and the NEC.

For background, the Commuter and Intercity rail Network in Virginia generally consists of two rail lines leading into Alexandria before converging and heading over the Potomac into DC: the CSX line that emanates northward from Richmond to DC and the Norfolk Southern line that comes from Manassas and Lynchburg on the southwest. There's 28 Amtrak trains, 34 VRE Trains, and over 20 freight trains converge each weekday on 3 tracks in Alexandria before traveling through Arlington and onto the 2-track Long Bridge over the Potomac and to a freight-passenger rail divergence point in DC. However, with all of that rail traffic the 2-track, century old Long



ATLANTIC GATEWAY PROJECT COMPONENT AND SUB-COMPONENTS

PROJECT COMPONENT	DESCRIPTION
Component 1: Rail Infrastructure	1A Long Bridge (Phase I)
	1B Dedicating the S-Line
	1C Constructing a Third Main Line Track (Franconia to Occoquan)
	1D Engineering for Long Bridge (Phase II)
	1E Improving Rail Operations Along the Corridor

Bridge cannot handle any new train traffic during peak periods, as it is effectively at full capacity.

Therefore, there are four projects of note in Northern Virginia to tackle this capacity problem:

1.) New Long Bridge over the Potomac that doubles rail track from 2 to 4 – in design,

2.) Alexandria to the Potomac River 6 miles of 4th Track – in design - $225M,

3.) Franconia to Occoquan 8 miles of 3rd Track – in design - $220M,

4.) Arkendale to Powell's Creek 9 miles of 3rd track – under construction - $115M.

All of these projects are inter-related, and the Long Bridge, Alexandria 4th Track, and Franconia projects are all part of Virginia's "Atlantic Gateway" Program (see map). The new Long Bridge, which is essential to add more capacity so more passenger trains can be added, necessitates a new fourth track in Alexandria to the Potomac to comport with the four tracks that will be over the Potomac. The 3rd track projects from Franconia to Occoquan and Arkendale to Powell's Creek will allow for more capacity and passing track for Amtrak, VRE, and CSX trains. Those who travel on VRE or Amtrak on the Arkendale corridor that surrounds Quantico witness firsthand the new concrete rail ties that have been laid and are waiting to be laid, as construction is 65% complete.

While the Arkendale project is well into construction the other three projects are well into the environmental and design stage, with the Alexandria 4th track and the Franconia 3rd track at 30% design and the environmental clearance expected in the first half of 2019. The new Long Bridge project, for which the conceptual design and environmental study is being led by DC DOT with an assist from DRPT, VRE, and CSX, is estimated to have 10% design (including a cost estimate) and the Draft EIS complete by the end of 2019. All of the projects – with the exception of the Long Bridge project, which does not yet have a cost estimate – are fully funded within DRPT's 6-year improvement program through various state grant programs, federal funding, and CSX financial support.

As mentioned these projects are moving forward with the cooperation, support, and blessing of CSX Railroad. CSX has pledged $15 million to the design of the new Long Bridge and is lending staff support to the other projects as well, if not outright leading the construction efforts as it is doing on the Arkendale project. DRPT Director Jennifer Mitchell and the Secretary of Transportation for the Commonwealth – Shannon Valentine – believe it is important to work cooperatively with the host freight railroads rather than work against them, and the Commonwealth has good relationships with CSX, Norfolk Southern, and the Short Lines in Virginia. The railroad industry in Virginia generates roughly $73 billion in economic output each year, with the vast bulk of that due to the freight railroads, and therefore freight rail industry is very important to the Commonwealth.

While Virginia is not looking to extend the NEC further south, Virginia is looking to make common sense rail improvements that will help mitigate growing congestion on its roads and be a conduit for economic development in the Commonwealth.

HIGH PERFORMANCE

RAIL SYSTEM DEVELOPMENT

Contributed by: Kenneth G. Sislak

There are several emerging high-speed rail corridors in the United States that are investing in infrastructure and train equipment designed to operate at speeds up to 110 miles per hour (mph). Why so slow you may ask? Shouldn't high-speed rail services operate at speeds of 220 mph or more as they do in the rest of the world? The answer can be found by examining the economics of high-speed ground transportation. Let's explore the legacy of how we got to where we are and what investments are being made today to advance the emerging high-speed rail corridors throughout the country.

ECONOMICS

In the 1980s and early 1990s several studies examined a variety of approaches to high-speed rail development. Illinois, Wisconsin and Michigan began studying improvements to routes in the Midwest that would raise speeds to 110 mph in several corridors emanating from Chicago including Chicago – St. Louis; Chicago – Detroit; and Chicago – Milwaukee. Washington State and Oregon began studying improvements to the Cascades Corridor (Portland – Seattle) and Virginia, North Carolina, South Carolina and Georgia studied the Southeast High-Speed Rail Corridor (Atlanta - Charlotte – Richmond – Washington, DC). Meanwhile, California launched studies of the Los Angeles – San Francisco high-speed train project and Florida, Ohio and Texas studied high-speed rail in high travel volume corridors in their states. And Congress instituted studies of Maglev trains. A national approach to high-speed rail development was needed.

In September 1997, the Federal Railroad Administration (FRA) published a report entitled, High-Speed Ground Transportation for America. The report is commonly referred to as the "Congressional Feasibility Study" because it examined the economics of bringing high-speed ground transportation to highly-populated groupings of cities throughout the United States. The Congress wanted to know if high-speed ground transportation was "commercially feasible" in certain corridors, meaning did it cover all its investment and operating expenses? The report was intended to determine national conclusions from projections of the likely investment needs, operating performance, costs and benefits of high-speed ground transportation (HSGT) in a set of illustrative corridors in several regions of the country. The report was technology neutral and looked at a variety of speeds including 90, 110, 150 and 220 mph or higher maximum authorized speed (MAS).

The Congressional Feasibility Study concluded that HSGT could induce appreciable ridership increases over the existing conventional speed Amtrak national network. It also found that because HSGT is very capital-intensive, requiring significant fixed investment to connect specific city-pairs, its success requires the highest possible concentration of traffic and revenue over as few route-miles as possible, so as to raise travel volumes and lower unit costs over its route structure.

The study results validated a principle of HSGT planning: that the "network effect" generates greater benefits than the sum of corridors individually due to more intensive and efficient use of the route structure. For example, the report found that the Southeast and Empire

Corridors would benefit greatly from more intensive use of the Northeast Corridor (NEC). The Midwest system using Chicago as a hub, would also produce more riders and benefits if it operated as an integrated network rather than a collection of individual services. California's recently published 2018 State Rail Plan reaffirmed this finding by studying the benefits of an integrated passenger rail network that used multiple hubs with timed transfers among high-speed, intercity, regional transit and commuter rail and Thruway bus services. (see article, "California State Rail Plan," page 17.)

However, the study found no HSGT corridor was projected to be "commercially feasible." In other words, no high-speed rail corridor studied would cover both its capital and operating costs. However, in most of the illustrative cases, HSGT was projected to function on a self-sustaining basis requiring no public subsidies for operations once the initial investment in infrastructure was in place and paid for. The report also found revenues could cover a portion of the initial investment in most of the illustrative cases. For most corridors, the percentage of the initial investment that could be covered peaked at the 110 mph MAS option. However, this finding assumed the cooperation of the host freight railroads and the HSGT operating entity's ability to achieve a more efficient operation than historically characterized by Amtrak. The report also concluded that the Boston – New York – Washington (NEC); Dallas – Houston and Los Angeles – San Francisco corridors could support HSGT at speeds higher than 150 mph MAS.

INCREMENTAL HIGHER SPEED

Thus FRA instituted an unofficial policy of supporting incremental investments in emerging high-speed rail corridors utilizing the existing freight and Amtrak passenger rail network to achieve optimal returns at the 110 mph MAS option as outlined in the report. The California high-speed rail project and NEC would also receive attention and special consideration when funding was made available.

In 2009, Congress passed the American Recovery and Reinvestment Act (ARRA or Stimulus Act) to stimulate the economy in the wake of the Great Recession. Congress provided $10.1 billion through the Stimulus Act and annual appropriations to provide funding to improve incrementally the reliability, speed and frequency of existing lines and to begin construction of the California high-speed rail project. The funds were invested in capital infrastructure and rolling stock among a three-tiered passenger rail network:

1.) Core Express services operating frequent trains at 125-250+ mph in the nation's densest and most populous regions (primarily NEC and Los Angeles - San Francisco);

2.) Regional services providing 90-125 mph service between mid-sized and large cities; and

3.) Feeder services (up to 90 mph) connecting communities to the passenger rail network and providing a foundation for future corridor development.

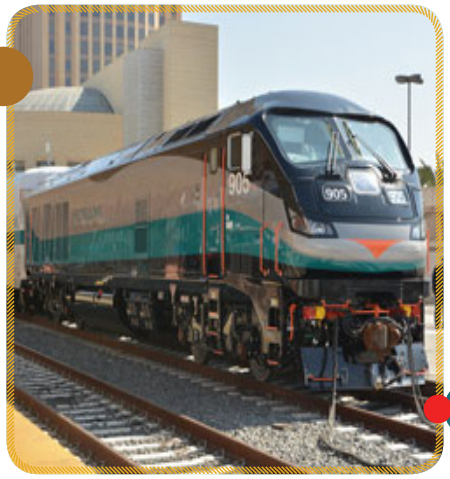
These strategic investments provided immediate benefits to rail passengers and others in the form of safer, faster, and more reliable passenger rail networks. Some of the funds were used to purchase new trainsets and locomotives that are capable of operating at speeds up to 125 mph on the regional rail services network. Some of the funds were used to study emerging corridors, such as the Minneapolis-St. Paul – Duluth (Northern Lights Express) and Chicago – Quad Cities corridors. Over 85 percent of the funding was spent in eight corridors:

1.) Los Angeles to San Francisco: $3.9 billion was awarded to the California High-Speed Rail Authority to help fund construction of the Merced – Bakersfield segment of the nation's first 220 mph high-speed rail system, which eventually will connect two of the country's largest metropolitan areas.

2.) Northeast Corridor (connecting Washington, DC, New York and Boston): Over $1.7 billion for improvements to the nation's busiest and most vital corridor. This funding was programmed to allow speeds of 160 mph between Philadelphia and New York City.

3.) Chicago to St. Louis: $1.4 billion was awarded to Illinois DOT to complete construction to increase speeds to 110 mph, to purchase new trainsets for the state-supported service and add service frequencies.

4.) Seattle to Portland: $847 million was awarded to Oregon and Washington State to build new stations, add new daily trains, complete numerous safety improvements, and provide faster service on this emerging high-speed rail corridor.



5.) Charlotte to Washington, DC: $765 million in federal funds was added to $846 million in state and local funds for investments that will allow adding new daily trains and decrease travel times on one of the fastest-growing corridors in the nation.

6.) Chicago to Detroit: $607 million was awarded to Michigan DOT to construct improvements that will bring a 30-minute reduction in trip time by operating 110 mph service along 235 miles of track.

7.) Harrisburg – Philadelphia (Keystone Corridor): The Stimulus Act provided an additional $59 million to Pennsylvania to improve track, signals and stations permitting 110 mph MAS in this key regional branch of the NEC.

8.) New Haven – Springfield: Connecticut received $201 million in ARRA funding that matched $186 million of Connecticut DOT funding. The infrastructure improvements allow higher speeds up to 110 mph MAS, increased frequencies and improved service reliability and ride comfort

The NEC, Keystone Corridor and California high-speed rail project are all electrified. All the other emerging high-speed rail corridors operate trains pulled by diesel-electric locomotives. In addition to infrastructure improvements, new trainsets to assure reliability, faster service and increased comfort and convenience were required. A consortium of states including California, Illinois, Michigan and Washington State jointly procured new trainsets and locomotives to support these higher speeds.

HIGHER SPEED DIESEL-ELECTRIC LOCOMOTIVES

The current Amtrak fleet of GE P40DC and P42DC Genesis diesel-electric locomotives that operate on the long-distance and state-supported regional routes are geared to operate at 103 MPH and 110 mph respectively. These locomotives were built by General Electric and delivered to Amtrak between 1993 and 1996. Amtrak issued a request for proposals (RFP) on June 1 for the modernization or replacement of these aging diesel-electric locomotives. According to the RFP, Amtrak is looking to rebuild at least 50 to 75 of its P40 and P42 Genesis locomotives, with AC traction or replace them with new units. The newest passenger diesel-electric locomotives delivered and in revenue service were built by Siemens at their Sacramento plant and by EMD at their La Grange, IL plant.

The Siemens Charger is a family of diesel-electric passenger locomotives designed specifically for the North American market. There are two models: the SCB-40 and the SC-44. The first production SC-44 unit was unveiled on March 26, 2016, and the first unit went into state-supported Amtrak revenue service on August 24, 2017. California, Illinois and Washington State jointly procured the SC-44 units, which generate 4,400 horsepower (hp). There are 63 units on order for the state-sponsored Amtrak services. Currently, 24 units have been delivered. There are an additional 17 units on order for commuter services in California (ACE and Coaster) and Maryland

(MARC). The SCB-40 locomotives were designed and built for Brightline in Florida. The SCB-40 locomotives generate 4,000 hp and have a more aerodynamic front end design that covers the front couplers.

The EMD F125 Spirit is a four-axle passenger diesel locomotive manufactured for the North American market at the La Grange, IL plant. It is powered by a Caterpillar C175-20 V20 diesel engine rated at 4,700 hp. The locomotive is capable of traveling at a maximum in-service speed of 125 mph (201 km/h) pulling consists of up to 10 cars. It is EMD's first new domestic passenger locomotive since the F59PHI built 16 years ago. Features of the F125 include EPA Tier 4 emissions compliance (with exhaust after-treatment), AC traction systems, extended-range blend and dynamic brakes with HEP regeneration capabilities, advanced crash energy management (CEM) technology, and a streamlined body design, designed by Vossloh Rail Vehicles of Spain. Metrolink purchased 40 units in late 2012 with the first unit placed into service in June 2017. Metrolink has an option to purchase 10 more units. The Metrolink units are geared for 100 mph MAS.

NEW TRAINSETS

The consortium of states that jointly procured the SC-44 locomotives from Siemen's also jointly procured new rolling stock. Caltrans managed the railcar procurement. Originally, Sumitomo Corporation of America was awarded a contract to produce 130 bi-level passenger railcars based on PRIAA Section 305 standards and the existing California Surfliner design modified for Illinois and Michigan requirements. It would be the first bi-level railcar to employ CEM. Nippon Sharyo was selected by Sumitomo as the railcar builder. Nippon Sharyo is a highly respected railcar builder and had delivered many passenger railcars to commuter railroads in the US. Single-level electric multiple unit railcars were delivered to the Northern Indiana Commuter Transit District (NICTD) in the early 1980s. Nippon Sharyo has since designed, built and delivered single-level push-pull coaches to Maryland MARC commuter rail (jointly with Sumitomo Corporation) and bi-level gallery cars for METRA, Virginia Railway Express (VRE) and Caltrain. In addition, Nippon Sharyo also built the Sonoma–Marin Area Rail Transit (SMART) DMU (also jointly with Sumitomo Corporation). Nippon Sharyo invested $35 million in a railcar assembly plant in Rochelle, IL to support the project.

However, failed crashworthiness tests for the bi-level railcars led to significant production delays, and the Occupational Safety and Health Administration fined the company for multiple employee safety violations. Those "complications" led to the eventual termination of the $352 million contract with Nippon Sharyo with Sumitomo then selecting Siemens to build single level cars along the designs of the Brightline trains delivered for the Miami – Orlando service in Florida. The contract awarded to Sumitomo and Siemens is valued at $371 million and now includes 137 rail cars. Eighty-eight of them are destined for the Midwest. The cars will be made at Siemens' rail manufacturing hub in Sacramento. Production was scheduled to start this summer. The first trainset is estimated to enter revenue service in summer of 2020. The final car is estimated to be delivered by May 2023.

The new coaches will be used on the state-supported intercity rail lines throughout California and the Midwest. The new cars will come with spacious, modern interiors that focus on passenger comfort and convenience, such as Wi-Fi, spacious seats with convenient power outlets, large windows with great views for all passengers, bike racks, overhead luggage storage, work tables, state-of-the-art restrooms with touchless controls and full ADA accessibility throughout the cars. And when pulled by the new Siemens SC-44 diesel-electric locomotives, the new higher speed trainsets will definitely have European design flair adding more customer appeal to the improved services.

DESTINATION: NORTHEAST CORRIDOR

Contributed by: Caroline Decker

A SENTIMENTAL JOURNEY

Allow me to take you on a brief, sentimental journey back in time to 2001 when I served as Chief of Staff for former U.S. Representative Bob Clement of Tennessee, then the Ranking Member of the House Railroads Subcommittee. Amtrak was hosting a Congressional briefing on the new Acela® Express trainsets that were entering service on the Northeast Corridor (NEC). Like most days on Capitol Hill, my schedule was filled with meetings, and I was unable to attend this important briefing. I knew it was a momentous occasion for Amtrak, but with our Congressional district encompassing Nashville in Middle Tennessee (far outside of the NEC network), I wasn't concerned about missing the discussion and knew that other Railroad Subcommittee staff would gather the necessary information for the Congressman.

It's a briefing that didn't cross my mind until several years later, in 2005. After Congressman Clement lost his bid for the U.S. Senate in 2002, my job search led me to Amtrak where I accepted a position in the Office of Government Affairs. One day as I was preparing for Hill visits, I found myself in need of a book bag for my briefing materials and located one with the Acela® logo. As I was getting things organized, I discovered a folder inside the bag and imagine my surprise when I found my name, in bold letters, affixed to the folder! This bag had been awaiting my retrieval for nearly four years.

Fast forward and in another interesting twist of fate, I still proudly use that bag during

my routine travel on the NEC in my new role as the Vice President of the Northeast Corridor Service Line. And it is at this moment in Amtrak's history, that we are preparing for the retirement of the original Acela® Express trainsets and the introduction of the new Acela® trainsets scheduled for January 2021. Destiny brought me to Amtrak and there's no place I'd rather be, particularly at this juncture in our history as we approach the 50th Anniversary of Amtrak, the 20th Anniversary of Acela®, the launch of new Acela® trainsets, and the opening of the new Moynihan Train Hall in New York City - all in the year 2021!

NEC NOW

With so many changes on the horizon, it's important to note that we aren't waiting for the future to redefine the customer experience on the NEC – we are making changes and improvements now. In our stations, on our trains, and technologically on Amtrak.com, our Twitter feed, our mobile app, we have renewed our focus on customer service and modernizing the customer experience. We have increased the number of on-board car cleaners on all trains between Boston and Washington and have implemented new standards for train cleanliness. There are new and improved Café Car food and beverage products on all NEC trains. We are making major investments to improve and strengthen Wi-Fi reliability. Additionally, all of the seats and cushions have been refreshed on the Northeast Regional (NER) trains and a similar refresh is underway for Acela® which will be completed by spring of 2019. All these changes and improvements have been met with great enthusiasm and the feedback we continue to receive from our customers validates the merit of the important investments we are making and will continue to make.

NOW ARRIVING: THE MOBILITY REVOLUTION

Underpinning just about every aspect of the customer experience are the technological innovations that will continue to transform the mobility ecosystem and the wide and growing range of transportation choices for individuals. The pace of change has been astonishing with the proliferation in recent years of ride hailing services, car sharing, bike sharing, autonomous vehicles, scooter sharing, and so many other disruptors – and more to come. In this fiercely competitive environment, Amtrak must work strategically to provide a higher quality, higher value product to retain our strong loyal customer base while we court and attract the next generation of NEC customers.

Amtrak is strongly positioned to ride the wave of this mobility revolution and to serve an even greater role as the preferred mode of intercity travel on the NEC. Increasingly, consumers are paying more attention to the fact that passenger rail is one of the most energy efficient modes of transportation available. Being a more sustainable option for travel is a significant competitive advantage for Amtrak. As travel preferences shift and expectations intensify from customers seeking a seamless mobile experience, contemporary amenities, uninterrupted Wi-Fi – Amtrak is poised to capture even greater levels of market share on the NEC from all modes of travel as we build on our record of success, emphasize our sustainability advantage, and deliver higher levels of service.

NEXT STOP: ACELA 2021

In 2021, Amtrak will introduce new, high-speed trainsets on the Northeast Corridor—the next generation of Acela® Express. This new service builds on the already very popular Acela® service with more trains, more seats, better amenities and a smoother ride. There will be 40% more trainsets than the current high-speed fleet (28 vs. 20), with more seating capacity (378 vs. 304), providing half-hourly service between Washington, D.C. and New York City during peak times and hourly service between New York City and Boston.

Fiscal Year 2019, which starts October 1, will be a transitional year for the trainset program. We will shift from primarily planning and design activities to program execution. The new trainsets are being manufactured at Alstom's facility in Hornell, New York. The first trainset prototype will be ready for testing in 2019 and will enter service in 2021, with all trainsets available for service in 2022. There is an enormous amount of work underway to support the launch of the new trainsets and there is much anticipation building at Amtrak as we prepare for this incredibly important milestone and relaunch of our premium line of service.

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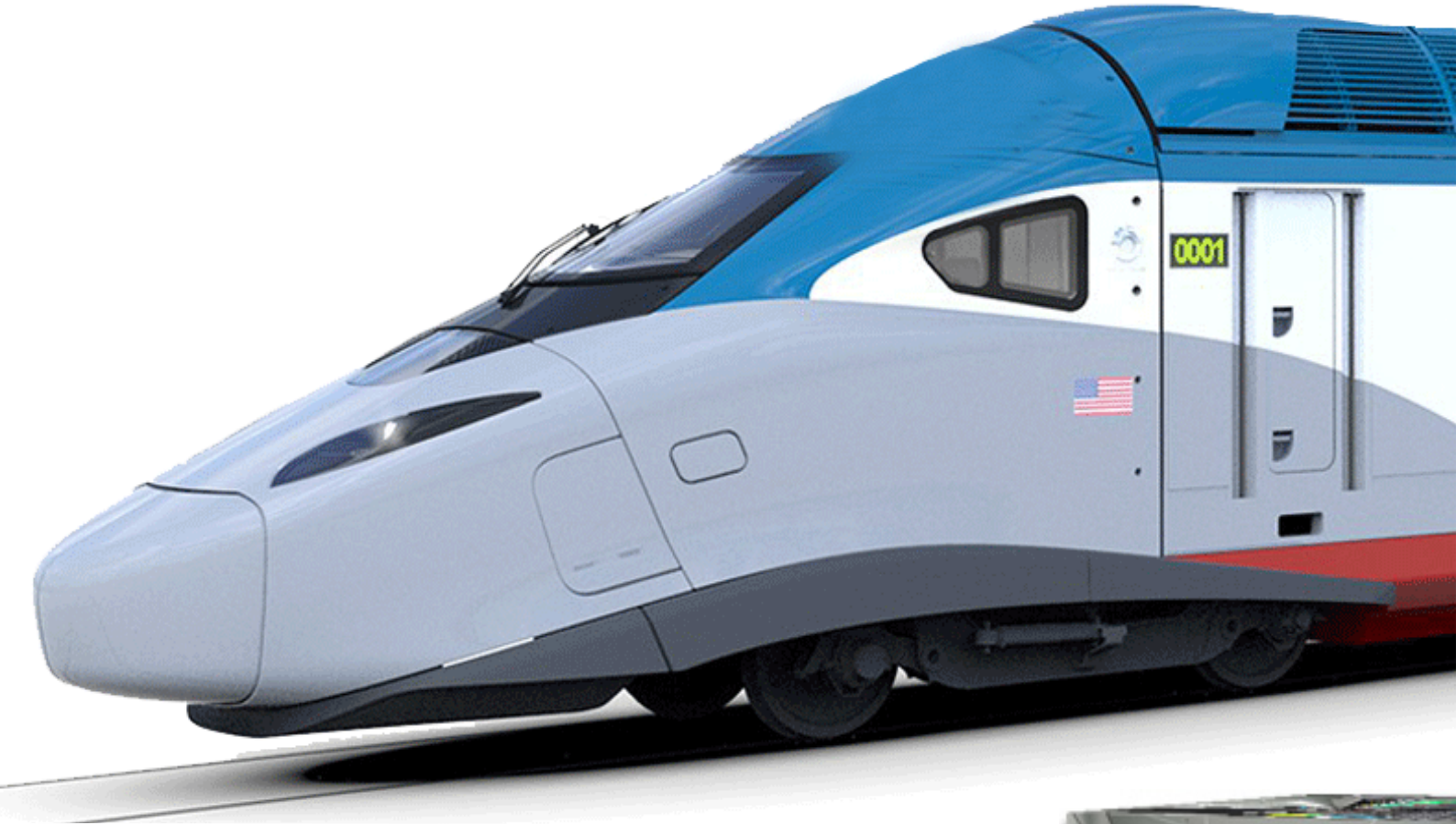
Thank you for joining me on this journey. Amtrak is committed to improving the delivery of service, not only on the NEC, but across our entire network. In the future, and as you find yourself on the NEC, I encourage you to share with me your views and observations about your travel. Thank you and happy rails!

Visit this link for more information on the new trainsets: https://media.amtrak.com/next-gen-trainsets/



Replacing the current Acela Express fleet, Avelia will run on the Northeast Corridor (NEC) between Boston and Washington, DC from 2021 onwards. Each train-set will seat 386 passengers, an increase of nearly 30% compared with the current equipment.

2021