

HIGH-SPEED INTERCITY PASSENGER RAIL

# SPEEDLINES

## IN THE NEWS

NOVEMBER 2017  
ISSUE #22

### COVER STORY

The first Amtrak Midwest Charger locomotives were unveiled in Chicago and have started revenue operations in Illinois and Wisconsin.



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SPEEDLINES MAGAZINE



Washington State Gov. Jay Inslee meets Premier John Horgan, B.C. and consider a high-speed rail link between Seattle and Vancouver.

## *On the front cover:*


Siemens is building the Buy America-compliant SC-44 at its facility in Sacramento, to be deployed on state and Amtrak services in Wisconsin, Michigan, Missouri, California and Washington. The Midwest states will receive and own 33 of the 4,400-horsepower locomotives, which were purchased through \$216.5 million in federal funding and are being assembled by Siemens in Sacramento.

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*Dear*  
**HS&IPR** Committee  
 & Friends:

Welcome to our latest issue of Speedlines. Committee Vice-chair Al Engel and his team once again have produced an informative and compelling issue. Speedlines, by itself, fulfills all four of the Committee's key actions to advance our mission: Communication, Committee Identity, Member and Partner Development and Advocacy.

Since our last issue, your Committee leadership has been very focused on an effective roll-out of the Framework for Assessing the Return on Investment from High-Speed Rail and Intercity Rail Projects, known as our "Return on Investment Study (ROI)." We also have worked on our Committee meeting and program at the APTA Annual in Atlanta, GA, and on the fourth annual High-Speed Rail Policy Forum coming up on November 29, 2017 at APTA headquarters in Washington, DC.

The ROI Study was produced by the Urban Transportation Center of the University of Illinois at Chicago with University of Illinois at Urbana-Champaign–Rail Transportation and Engineering Center (RailTEC) Economic Development Research Group. It was overseen by a Technical Review Team comprised of Committee members chaired by Charles Quandt of Quandt Consultants. Committee members, including Charles and Sharon Greene of HDR, have presented the study to industry associations as part of the roll-out. APTA staff has summarized the extensive text into a user-friendly hand-out to introduce the assessment to the industry. We want it to be used and useful. The effort was funded by several APTA business members.

The Committee met bright and early on Sunday, October 8, at the APTA Annual Meeting. As usual, the meeting was very well attended and more chairs were brought in to accommodate attendees. New APTA Chair Nathaniel Ford briefed the Committee on his five priorities for APTA action the next two years: Leadership/Advocacy; New Mobility Paradigm; Workforce of the Future; Leveraging big Data; and Enterprise Risk Management. He talked about recent APTA developments, including the proposal to reformat and reschedule the entire APTA conference and meeting program. Nat announced that your Committee Chair would be a member of the Committee he was appointing to review the plan.

The rest of the agenda included a review of the Committee's Annual Meeting Session topics and the ROI roll-out. Kevin Kestler of the Federal Railroad Administration represented Acting Administrator Heath Hall with informative remarks and Q&A. Commuter Rail CEO Chair briefed us on his Committee's perspective on the freight-Amtrak on-time performance legal action.

The meeting concluded with an on point presentation by a team from APTA Leadership: Holly Arnold of Maryland Transit Administration, Francis Julien of Keolis, Lucas Olson – HDR, Joe Coker of Dallas Area Rapid Transit, and Kimberly Fragola from Centre Area Transportation Authority. They provided a data-packed presentation on "On-time Performance."

Committee Leadership conducts monthly conference calls to work on the business of the Committee. In the last few months there have been many calls to plan the Policy Forum.

I want the Speedlines team leaders Al Engel, Ken Sislak, Eric Peterson and Wendy Wenner of Amtrak and all of our contributors for their hard work on this edition.

And thank you for your continuing interest in the APTA High-Speed & Intercity Passenger Rail Committee.

*Anna M. Barry*



*Give  
Thanks*

For All Things  
Great & Small

# NEW YORK HUDSON TUNNELS

## INSIDE THE CRUCIAL (AND COSTLY) FIGHT TO FIX NEW YORK'S TUNNELS

Contributed By: Daniel C. Vock

Superstorm Sandy roared into New York City in October 2012 pushing a wall of water ashore just half an hour after high tide. The combined 14-foot “storm tide” inundated the city, flooding 51 square miles, or about a sixth of its total land mass. It cut off power, knocked out natural gas lines, and overwhelmed streets, tunnels and bridges.

In one place, between 30th and 34th streets in Midtown Manhattan, water from the swollen Hudson River spilled into the cavernous underbelly of Pennsylvania Station, arguably the most important transportation hub in North America. As the water approached, officials at Amtrak, which owns the station, confronted a gut-wrenching choice: Should they allow the seawater to flood the tunnels under the Hudson, each fragile and more than a century old, and potentially split the northeast rail corridor in half for years? Or should they force the seawater into Penn Station, where it would wreak severe damage on the railroad’s busiest passenger facility? With little time for debate, Amtrak let its tunnels flood. As a consequence,

one of the most crucial pieces of rail infrastructure in the country acted as a stormwater drain for Manhattan.

Ultimately, it took only five days to clear the tunnels of 3.5 million gallons of seawater and to reopen the route to traffic. But while the workers could pump out the water, they couldn’t get rid of the salt that it left behind. Chlorides and sulfides had permeated the concrete walls and started irreversible chemical reactions with the concrete, cast iron and steel inside the tunnel. Amtrak hired engineers to assess the damage. They concluded that the tunnels were safe for the time being, but that there was no way to stop the deterioration short of replacing the damaged walls and tracks.

The whole episode taught New York-area residents and politicians a lesson in how dire the consequences might be if one of the Hudson River tunnels failed permanently. It forced the governors of New York and New Jersey into supporting a massive new proposal called the Gateway Program that would add tunnels, replace antiquated bridges and expand the cramped Penn Station. The

governors came to the White House recently to meet with President Trump about the proposal. It was a crucial event. For the work to begin, Amtrak, the states and the hundreds of thousands of people who travel beneath the Hudson River every year need the president, and possibly Congress, to agree to pay for a substantial share of a project that, at a cost of up to \$30 billion, would be one of the most expensive infrastructure ventures in the history of the United States.

The Gateway Program is hugely expensive because it includes many different improvements. Its planners want to do far more than simply fix the existing infrastructure. For an estimated \$1.8 billion, they could just rehabilitate the tunnels that were damaged by Sandy. But that would require them to shut down the old tunnels for repair. So the planners want to build two new tunnels south of the current route that would cost another \$11 billion. The plan also calls for other related improvements between Newark and New York, including connecting the Hudson crossing to another New Jersey Transit line, replacing a whole

series of bridges and expanding Penn Station to add seven more tracks. All the improvements would take decades to complete; while service would improve along the way, the earliest possible completion date would be around 2030. "Where the whole Northeast rail system is busiest, the straw is the smallest. You have two tracks in a place where you should have eight. Sooner or later, it will come back to bite us if we don't have redundancy," says John D. Porcari, the interim executive director of the Gateway Development Corporation, which is coordinating the project. "This Gateway Program is a metaphor for our national will to not just take care of an urgent situation today, but to build for tomorrow."

Amtrak and two commuter rail systems -- New Jersey Transit and Long Island Railroad -- drop off or pick up 430,000 passengers at Penn Station on a typical weekday. The railroads handle twice as many passengers a day, on average, as the region's Kennedy, LaGuardia and Newark airports combined. Penn Station's adjoining subway stations, meanwhile, add another 345,000 trips on weekdays.

Penn Station is straining to handle all of the traffic. The number of people coming through the station has doubled since the 1980s, and most of that growth has come from the two commuter railroads. Passengers complain that Penn Station's platforms are narrow and crowded. Operations are also strained. Even with 11 platforms and 21 tracks, there is no extra capacity available to move operations if a train breaks down or a passenger gets sick. The constant activity makes it hard to maintain the tracks, switches, power lines and other equipment because Penn Station is open 24 hours a day.

But even if Penn Station had more space and better facilities, the Hudson

River tunnels would still be a huge problem. Trains from Long Island come in from the east, using one of four tunnels connecting them to Queens and beyond. But going west to New Jersey, under the mile-wide Hudson River, there are only two tunnels -- one in each direction. It's a huge chokepoint that, especially should it fail, threatens to cut off the country's biggest job center from one of its main sources of workers.

Just how bad is the bottleneck? Consider this: There are currently 15 ways -- 12 bridges and three tunnels -- to cross the Harlem River from the north into Manhattan. To get across the East River from Brooklyn or Queens into Manhattan, commuters have 18 routes to choose from, not including ferries. But to get from New Jersey into Manhattan across the Hudson, there are only six possible entry points.

Meanwhile, demand for Hudson River crossings is increasing. For the last two decades, New Jersey and its northern cities have encouraged development near train stations. The New Jersey cities attract residents who can't afford to rent or buy in New York, but can still work there with a straightforward commute from the New Jersey side into Manhattan. With rail crossings essentially at their maximum capacity, New Jersey residents have flocked to commuter buses. Nearly 7,700 buses cross the Hudson River every day, compared to fewer than 600 from the north and nearly 1,100 from the east.

For decades, New Jersey's leaders have talked about the need for more rail access into New York. Superstorm Sandy showed them how easily they could lose the one major link they already have. They are convinced that losing it could throw the state's entire economy into a recession. With New Jersey and Pennsylvania residents making up 16 percent of Manhattan's workforce, the effects would reverberate throughout

the region. "I don't think there's ever been a more clear link between economic recovery or development and an infrastructure project," says Porcari. "The New York and New Jersey economy is important to the rest of the country's economy from a finance, manufacturing and other sector perspective. It's a highly dependent economy."

Part of the reason that Penn Station is so ill-equipped to handle traffic from New Jersey is that its architects never really envisioned it as a commuter hub. The Pennsylvania Railroad, a behemoth of a company as famous in its day as the enterprises owned by the Vanderbilts and Andrew Carnegie, opened both the station and the Hudson tunnels in 1910. The original Penn Station overwhelmed passengers with its scale, audacity and beauty. The Beaux Arts building covered more than seven acres. Colonnades graced the exterior under the watchful gaze of perched eagles, while inside, steel pillars in a great hall held up a canopy of glass skylights that illuminated statues of allegorical figures.

The Hudson River tunnels were huge achievements in their own right. They were "the biggest civil engineering project in America," says Jill Jonnes, author of the book *Conquering Gotham*, which chronicles the massive effort it took to build Penn Station and its adjoining lines. Before the tunnels were built, railroads had to bring passengers from the south and west up to the Jersey side of the river and then transfer them onto ferries. Previous attempts to burrow through the silty soil beneath the Hudson River ended in disaster, and an effort to bring several railroads together to build a bridge over the wide span crumbled for competitive reasons. So the Pennsylvania Railroad eventually drew inspiration from the engineers of Paris and dug its way under the New Jersey Palisades and the Hudson, while simultaneously

building the four tunnels to Long Island. Putting trains through those long tunnels required the railroad to build electric -- rather than steam -- locomotives, so they wouldn't poison the underground air.

But the focus of the Philadelphia-based railroad was just getting people to and from New York City, in the way an airline might today. It wasn't thinking about how its conquest of Gotham could change Gotham. "It totally transformed New York, geographically, because it knit all these suburbs in a way that they totally had not been before," Jonnes says. "It enabled the entire region to grow, with Manhattan being the central commercial core and all these vast armies of commuters being able to easily get in and out."

After several decades, though, the original Penn Station fell into disrepair while the Pennsylvania Railroad itself teetered toward bankruptcy. Automobiles and highways reigned supreme after World War II ended, and the railroad industry suffered. In a desperate move to keep the company afloat, the railroad sold its iconic New York building to a real estate developer, who demolished it, replaced it with the Madison Square Garden sports arena and relegated the train depot to a warren of sterile underground spaces. Within a few years, the railroad would also be gone. In the 1970s, Amtrak assumed control of the Northeast Corridor and Penn Station with it. But it, too, faced huge financial problems, and for years its very existence seemed in doubt. Amtrak was in no position to deal with a massive problem like the congested Hudson River tunnels. Those discussions wouldn't even start in earnest for two decades.

It was in 1995 that the region's three major transit agencies began those talks, looking at more than 100 options for new connections between

Midtown Manhattan and New Jersey. The alternatives included commuter rail, bus, light rail, subway, automobile and ferry crossings. After eight years of study, they settled on a rail crossing, with three possible routes -- a plan that shares many of the same characteristics as the Gateway Program.

That original plan, which went by many names over the years, including Access to the Region's Core (ARC), went smoothly at first. Officials broke ground for construction in June 2009. The kickoff ceremony featured New Jersey Gov. Jon Corzine, regional leaders and officials from the Obama administration. At the time, the project was billed as the country's most expensive infrastructure project (the California high-speed rail line has since earned that designation). Officials anticipated the new tunnels would open in 2018.

But even as construction started, there were complaints about the design of the project. The ARC tunnel would have been a deep one, and it would have ended under the Macy's flagship store on 34th Street, kitty-corner from Penn Station but not connected to it. So the new station

for New Jersey Transit customers arriving in Manhattan would have been 150 feet below ground, with connections to subway lines and other commuter railroads, but not Amtrak. That meant that the station and the new tunnels would have almost exclusively served New Jersey commuters. In other words, New Jersey and the federal government would have borne most of the cost of building them.

Less than a year later, Chris Christie, a Republican who beat Corzine for the New Jersey governorship in 2009, scuttled the project. Christie had supported the ARC tunnels during the campaign and during the early days of his administration. But in October 2010, he changed his mind, saying cost estimates for the project, which started at \$9 billion, seemed to keep rising. He worried that the federal government would have required New Jersey to cover any cost overruns. "When they want to build a tunnel to the basement of Macy's, and stick the New Jersey taxpayers with a bill of 3 to 5 billion over -- no matter how much the administration yells and screams, you have to say no," Christie explained

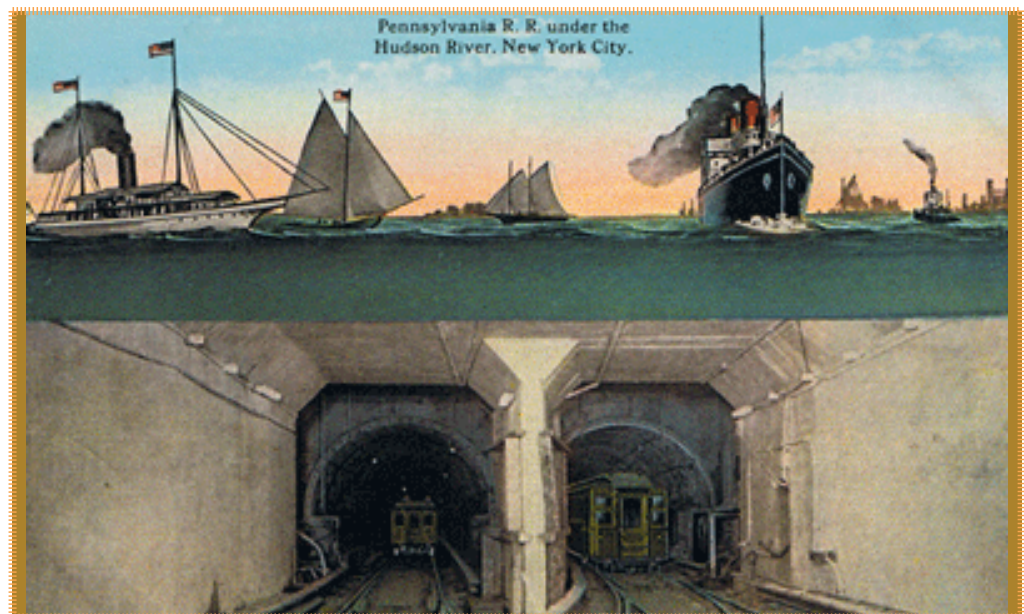




Photo Compliments of: David Kidd

two years later, after federal auditors disputed many of his stated reasons for pulling the plug.

Christie's political opponents saw different motivations for the governor's change of heart. By canceling the project, Christie was able to spend the state's share of the money on highway improvements and avoid a gas tax increase for a few years, even after paying the federal government back \$95 million of what it had spent on the project. The move also came as Republican gubernatorial candidates around the country were attacking the largesse of the Obama fiscal stimulus package, particularly for rail projects in Florida, Ohio and Wisconsin. Putting the brakes on government spending improved Christie's bona fides for a potential presidential run, or so it seemed to many angry New Jersey Democrats.

But Christie's unexpected veto was not the death knell for the Hudson River crossing, after all. In fact, the move immediately set Amtrak scrambling to introduce a more palatable alternative.

Three months after Christie stopped construction on ARC, the chairman of Amtrak joined New Jersey's two U.S. senators in

announcing plans for the Gateway Program. The new plan would build on some of the work already done for ARC. In fact, the tunnels would start off on a similar path on the New Jersey side. But rather than looping around north of Penn Station to a new station, the Gateway proposal envisioned the tracks coming into Manhattan from the south, through the Hudson Yards development and into Penn Station itself. With Penn Station included, the new tunnels could be used by Amtrak's trains, not just New Jersey Transit.

Later that day, Christie said he was "thrilled" by the new proposal, even though it was more expensive than the one he had halted. His initial excitement, though, only went so far. "If they ask me for a check today, the answer is no," he said.

For some time, the Gateway Program remained just one of many infrastructure improvement ideas for the region. Officials had to worry about other projects such as rebuilding the Tappan Zee Bridge, raising the Bayonne Bridge, completing the Second Avenue Subway, and construction of One World Trade Center and its nearby transit station.

Tom Wright, the president of the Regional Plan Association, who has been pushing for a new Hudson tunnel since 1996, remembers trying to rally the business community to advocate for Gateway. New York Gov. Andrew Cuomo "had been very focused on infrastructure but not this project, because the people travelling under that tunnel are not his voters," Wright says. "It's ingrained in politicians to think about the voters and not about the people who work in their districts. So the commuters had been political orphans. That's why it took so long for this project to get the attention it really deserves."

"Even before Superstorm Sandy, we saw time as the enemy," Wright adds, "because we saw the capacity we had was being filled up. Now the tunnels are deteriorating. And time is our enemy because costs go up so dramatically. Labor does not get cheaper. Steel does not get cheaper. Nothing gets less expensive in a year. Every year we lose, this project gets \$1 billion more expensive."

But even with the consensus after Sandy that the Gateway Program



ought to go forward, there was still no clear answer to the big questions of who would pay for it and how. Those questions came to a head in 2015. That spring, Amtrak's then-CEO Joseph Boardman finally let the public know how long the agency anticipated the damaged Hudson tunnels could last before they'd have to be closed for major repairs. "I'm being told we've got something less than 20 years before we have to shut one or two down," he said.

Meanwhile, John Degnan, a former New Jersey attorney general, took over the Port Authority of New York and New Jersey in 2014, following the Bridgegate scandal that tarnished both Christie and the port authority. One of Degnan's first priorities was pushing for the Gateway Program. He helped organize a meeting at the new One World Trade Center tower that included both Christie and Cuomo. A top transportation official from the Obama administration let the local leaders know the federal government wanted them to come up with a plan. "We need action by our Congress, we need action in Trenton, we need action in Albany and we need it soon," Peter Rogoff, then an undersecretary of transportation, told the gathering. "We in Washington foolishly thought that something so fundamental would certainly have a solution by now."

A few months later, Rogoff's boss, Transportation Secretary Anthony Foxx, complained that inaction from regional leaders on the Gateway Program was "almost criminal." Cuomo, in particular, chafed at the criticism. He pointed a finger at the Obama administration for only offering the states a loan to cover the cost of the project. "It's not my tunnel!" an exasperated Cuomo told reporters that August. "Why don't you pay for it? It's not my tunnel. It is an Amtrak

tunnel that is used by Amtrak and New Jersey Transit."

Finally, in September 2015, Christie and Cuomo sent Obama a joint letter, in which they committed to funding half of the project's costs using state and local funds.

They asked Obama to commit the federal government to paying the other half, as well as speeding up environmental reviews so that construction could start quickly. "The key step on the tunnel is to secure federal funding and design a viable financial package," they wrote. "No other option is feasible. We assure you that, if we have the funding, we will get it done."

The Obama administration agreed to the funding split and fast-tracked the environmental reviews. In fact, Gateway officials now hope to get the final environmental sign-off for the new tunnels next spring, two years after submitting the designs for review.

But it's still an open question whether the Trump administration will keep the agreement made by Obama, especially because federal officials never specified where they would find the money. Gateway is such a big undertaking that it would overwhelm any of the current programs for funding transit projects, especially if the dollars for those types of projects are cut as the Trump administration has proposed.

The federal government has a special responsibility for maintaining the Northeast Corridor, says Jeff Davis, a senior fellow at the Eno Center for Transportation, because it took over the property and created Amtrak to run it. For the first phase of Gateway, Amtrak and the states are asking the federal government to pick up half the cost of \$13 billion in projects. But the grant program they applied to has only a \$2 billion budget.

It's true that Trump talked repeatedly in his campaign about the need for Congress to pass a new infrastructure building law, and his administration has made clear its hopes to promote projects that use private capital to build them. The Gateway Program could foreseeably have big private components. But it seems unlikely that the private sector would pick up most of the federal share. Plus, it's unclear when, if ever, Congress will begin work on a new infrastructure package.

This spring, though, the situation at Penn Station got even worse. Three trains derailed there in a five-month span. The derailments happened in the space, called an interlocking, between the Hudson tunnels and the passenger platforms, where trains spread out to their destinations. The malfunctions prompted Amtrak to shut down several tracks for repairs, cutting back service for each of the commuter railroads as well. Cuomo admonished commuters to expect a "summer of hell" because of the repair work. The warning overstated how bad the commutes would be, but the emergency repairs underscored the fragility of the system.

Cuomo had a chance to bring his concerns to Trump in September at a White House meeting with Christie and members of Congress from New York and New Jersey.

Participants in the meeting described it as positive. But this time it was Cuomo who seemed impatient. "While the White House meeting was productive, it was inconclusive," he told reporters. "My position is very simple: It's critical. It's vital.

It's overdue. It's been talked about for too long. You should have had a shovel in the ground from the day you said go."



# KEEPING RAIL TOGETHER

Contribution By: Jean Pierre Loubinoux

Rail continues to face a series of challenges and something of a dichotomy – if there is not the need for rail services from potential customers then it is not easy to attract the levels of investment that are needed to attend to the rail system's structural challenges.

By 2050 the majority of medium-distance passenger transport should go by rail. Studies based on experience and macroeconomic models have shown that the socioeconomic profitability of a rail project, where financial returns are spread over long periods, is of the order of 3 to 5 percent. This is an increasingly, universally, acknowledged figure. In Europe alone, jobs in the supply industry total 400,000, while operators and infrastructure management companies employ 2 million people.

All the studies show that by 2050, we can expect, taking all modes together, an increase of 80% in freight volumes and of more than 50% in passenger numbers. We can note that demand by 2030 will be in line with this across-the-board growth; an 8-fold increase in freight; and a 12-fold rise in passengers, with a resulting growth in demand for rail of 2 to 3% per annum. This is also confirmed by forecasts from suppliers and from the rail industry which expects markets for urban, freight and inter-city rail transport to be on the rise, in the order of 4% per annum.

Railways must be the incarnation of this economic, social and cultural continuity, the bridge across the Euro-Asian continent through the strong cooperation of all stakeholders in the rail sector in

this area (opening of the former Silk Route between EU and China). The customer is seeking attractiveness of the products (services) that rail can offer (price, reliability etc), coupled with good connectivity. But rail suffers when either the infrastructure or the rolling-stock (or both) fail to live up to those customer expectations.

## UIC ROLE & ANALYSIS

UIC – the International Union of Railways - reflects the objectives and missions of my organization aimed at:

- The promotion of rail transport at world level and with the aim of optimally meeting current and future challenges of mobility and sustainable development;
- The promotion of interoperability and creation of new world standards, for all railways to manage the present and anticipate the future;
- The proposition of newways to improve the technical and environmental performance of rail transport, the reduction of costs, especially the LCC related to the important investments done;
- To support our members in their strategies to improve their competitiveness and business focuses;
- To support members to answer to the new challenges (digital);
- Starting from idea to the POC (proofs of concept) a later project development
- Offering different Guidelines, IRS (International Railway Solutions), Tools

It is really positive that the development of rail as a sustainable mode of transport for the 21st century is now firmly on the political agenda and attracting the interest of the financial institutions and other stakeholders with the support of UIC.

By working together, we can make much more of the capacity potential of our rail network and the combined opportunity to provide modern services to the customer and efficient trade links - an improved world with rail at the very heart.

I am sure that with the support of all our UIC members – and fruitful cooperation - we will be able to achieve the goals we have set, such as an even safer railway system, a system that in the future will more efficiently and at lower cost serve us as the backbone of our transport system.

Cooperation and collaboration are essential to convince you, the political and financial stakeholders, that rail presents an attractive investment; to make this work there is a need to look forward and to involve as many players as possible.



# HIGH-SPEED RAIL: AT A CROSSROADS

Contributed By: David Carol

*David J. Carol serves as deputy project director on the Tel Aviv Red Line light rail project for WSP, which is contributing to high-speed rail projects worldwide, including its role as rail delivery partner for the California High-Speed Rail Authority.*

It is the best of times and ... perhaps the most unclear of times for high-speed rail (HSR) in the United States. Major corridor programs – such as California High-Speed Rail and the Northeast Corridor – are actively advancing visionary futures for public transportation. Privately funded projects – All Aboard Florida's Brightline project and Texas Central's Houston-Dallas HSR program – have achieved major and exciting milestones. Other programs—from the Chicago-St. Louis HSR program to the Southeast High Speed Rail Corridor to the Hartford Line program in New England—continue to progress.

Yet, future federal funding for HSR remains clouded in the complexities of the federal appropriations process amidst a change in

Administrations that has yet to generate a clear direction or vision for investment in high-speed rail. While states such as California have and will continue to step in with significant, and often creative, funding initiatives, such as the use of cap-and-trade taxes on greenhouse gas emissions to partially fund the California High-Speed Rail Program, it is the long-term availability of federal funding that ultimately will define the scale and pace of HSR implementation in this country.

For the first time ever, as a direct outcome of the \$10 billion investment in HSR made in 2009 and 2010, states across the country have developed and now completed the environmental and planning processes for a myriad of new HSR systems and for expansion of existing ones.

The Federal Railroad Administration (FRA) has overseen dozens of environmental and engineering projects that make the nation truly “shovel ready” for passenger rail investment. This includes the California High-Speed Train Project; the Eugene-Portland-Seattle-Vancouver Cascades program; various Midwest corridors connecting to Chicago; the Atlanta, Charlotte, Raleigh, Richmond and Washington Southeast HSR Corridor; the Northeast Corridor; the Boston and Montreal Northern New England Intercity Rail Initiative; the Tucson-Phoenix corridor; Tulsa-Oklahoma City HSR; the Minneapolis-Rochester ZIP Rail project; among other rail corridor initiatives.

With federal funding, these programs could accelerate design and construction, ushering in a new era of transportation in this country. Yet, legislative

efforts to define a long-term investment program and to provide a long-term funding vehicle for investment remain stalled in Washington. Funding for FY 2018, and congressional priorities for that funding, will not be resolved until sometime this fall. Until a sustained funding program is implemented, many plans will remain on the shelf. Nonetheless, real progress is being made in a number of major corridors.

## CALIFORNIA

The California High-Speed Rail Program, the largest single rail transportation project in U.S. history, is making significant construction progress as it seeks to implement the first 119-mile segment of world-class HSR infrastructure in the U.S. The project, which will eventually connect San Diego, Los Angeles, San Francisco and Sacramento, will be implemented in phases, with many related upgrades to the state's extensive commuter rail system. Work currently is focused in the Central Valley, with the first phase of service linking San Jose to Bakersfield expected around 2025. Some 13 active construction projects are under way, ranging from construction of new rail infrastructure to new bridges and viaducts to convey vehicular traffic over the railroad. Some major recent milestones include:

Completion of the Tuolumne Street Bridge in downtown Fresno, a large structure that carries vehicular traffic over the Union Pacific and future HSR tracks. Beginning in 2015, the project involved placement of 42 massive steel-and-concrete girders, each some 149 feet long and weighing more than 83 tons. The bridge reopened to traffic on August 3, 2017.

New spans on the 3,700-foot Cedar Viaduct in Fresno, which will carry high-speed trains over State Route 99, North Avenue, Cedar Avenue, and Golden State Boulevard. Crews are installing reinforcing steel bars in preparation for the next concrete pours. The massive structure is expected to be completed in 2018.

Near completion of the Fresno River Viaduct, a 1,600-foot structure that will carry high-speed trains over the Fresno River and State Route 145 outside of the town of Madera. The viaduct was the first project to start construction.

## NORTHEAST CORRIDOR

The FRA has achieved two major milestones related to enabling the Washington-New York-Boston corridor to accommodate growing demand for intercity and commuter rail services. In July 2017, the FRA released the Record of Decision for NEC FUTURE, its planning platform for defining the expansion of the Northeast Corridor (NEC) over the next 25-50 years. The alternative adopted by the FRA would accommodate as many as five times as many intercity trains on the NEC as operate today, significantly reduce travel time, enable commuter railroads to meet projected growth, and upgrade the NEC to a state of good repair. The program foresees addition of some 200 miles of new track and alignments, replacement of most of the aging bridges across the 465-mile corridor, and elimination of numerous chokepoints that result in delays and restrict operations. The expansion would support a near doubling of ridership across the NEC, as well as transforming the NEC into an integrated network for commuter, regional and intercity rail services. In all, some

\$135 billion in investments would be required over a 25- to 50-year period, creating a reliable, fast and safe rail corridor that for many would be the predominant means of transportation across the region.

In addition to NEC FUTURE, the FRA released the draft Environmental Impact Statement for the Gateway Tunnel Project, the critical effort to build two new tunnels under the Hudson River from New Jersey to Penn Station in Manhattan, and to rehabilitate the existing 115-year-old Hudson River tunnels, heavily damaged in Superstorm Sandy. The current tunnels under the Hudson River, along with aging infrastructure and capacity constraints at Penn Station, represent the single worst bottleneck on the NEC. Expanding service to and from Penn Station is the cornerstone for expanding NEC service and ensuring a vibrant and competitive regional economy. Amtrak, New Jersey Transit, the Port Authority of New York and New Jersey, and the FRA are leading the effort to address this critical deficiency. Future work will focus on expansion of Penn Station to add platforms and tracks and to incorporate new train operations at the Farley Post Office adjacent to Penn Station. Meanwhile Amtrak has ordered new high-speed trainsets to initially supplement and then replace the existing Acela fleet.

## BRIGHTLINE

Brightline is the privately funded passenger rail initiative to create a new train corridor connecting Miami, Fort Lauderdale, West Palm Beach and Orlando. Owned by All Aboard Florida, a subsidiary of Florida East Coast Industries, the rail service will be built in two phases – from Miami to

West Palm Beach on upgraded existing right-of-way and then to Orlando on new alignment capable of 110 mph operations. Travel time will be approximately three hours end-to-end. Work is currently focused on upgrades between Miami and West Palm Beach, with three major stations and track upgrades under construction, and on trainset acquisition and commissioning. While not the 90-minute HSR service many want for the Miami-Orlando market, Brightline will serve some of Florida's most populated cities and tourist destinations with frequent and fast rail service. Moreover, it will be the first privately funded U.S. rail corridor program in decades, presenting a new model for rail corridor implementation at a time when public funding for new rail infrastructure is so challenging. Brightline anticipates start-up of its first phase later this year.

#### TEXAS CENTRAL HSR

Texas Central is another privately developed passenger rail initiative that could dramatically expand travel options between the state's two economic powerhouses – Dallas/Fort Worth and Houston. The \$12 billion initiative, which will utilize N700 Shinkansen train technology developed and operated by Central Japan Railways, will support 90-minute service between the two cities, with an additional mid-line stop near the state's largest university, Texas A&M. The project is attracting a myriad of institutional investors and Texas Central Railroad recently awarded a contract for construction of the civil infrastructure. The final environmental impact statement is anticipated later this year. The success of the Texas Central initiative – a HSR corridor serving two large business

markets supported by Japanese rail interests and requiring no federal and state funding – may well define the future of HSR in the United States. Its success will provide a powerful model for implementation of new passenger initiatives in corridors where premium fares from the business travel market can support capital and operating costs without significant public funding.

In addition to these major initiatives, work continues on other important HSR projects. Between St. Louis and Chicago, completion of track and crossing improvements this year will reduce travel times by as much as an hour. In Connecticut, Hartford Line service connecting New Haven, Hartford and Springfield, Massachusetts will begin service in 2018, with some 16 new daily round-trip trains connecting central New England to the NEC. Amtrak's Downeaster service from Boston has been extended to Brunswick, Maine, including completion of a new maintenance facility in Brunswick. Major improvements are under way between Richmond, Virginia and Washington, D.C. to improve travel times and expand the capacity of the rail corridor to support additional frequencies, while the North Carolina Department of Transportation is completing several grade separation and capacity expansion projects to support additional Piedmont and Southeast HSR corridor service. In the Pacific Northwest, the State of Washington recently announced a new initiative, supported by Microsoft and other major companies, to implement HSR for the Portland-Seattle-Vancouver corridor.

The success of these initiatives,

and the willingness of state governments to finance improved passenger rail service, underscores the public support for passenger rail and the strong economic and environmental benefits it can provide. Elsewhere in the world – notably France, the UK, Singapore and China -- national governments continue to use HSR investment to achieve broad economic, environmental and social policy objectives. Whether, and to what extent, the U.S. government follows suit is an open question.

**If everyone is  
moving  
forward  
together, then  
success takes  
care of itself.**

**- Henry Ford**

# LEGISLATIVE UPDATE



2017

CONTRIBUTED BY: Jeff Boothe, President Boothe Transit Consulting, LLC

House and Senate Republican Leadership in the Congress have established a very ambitious agenda for the remainder of the First Session of the 115th Congress - comprehensive tax reform, an infrastructure package, extension of the Debt Limit, revised budget caps for Fiscal Year (FY) 2018 and 2019 and the passage of twelve appropriations bills for FY 2018.

## COMPREHENSIVE TAX REFORM

An important first step for comprehensive tax reform was taken in the Senate on October 19th when the Senate adopted the FY 18 Budget by the vote of 51-49 and the House voted on October 26th by a vote of 216-212 to adopt the Senate Budget. By the adoption of the FY 18 Budget, Congress assumed "savings" of \$1.5 trillion over the next ten years sufficient to argue that a comprehensive tax reform bill is "paid for" and will not contribute to the deficit. Not a single Democrat voted for the adopted budget. However, the resolutions to adopt the budget are not subject a filibuster so a simple majority was all that was needed for them to be adopted.

Now the hard part - - reaching agreement on the details of a comprehensive tax reform bill. Both the House and Senate share the goal of lowering the rates and number of tax brackets for both individuals and corporations. They also agree on lowering tax rates for corporations to encourage those corporations to bring funds held overseas into the United States. This is referred to as repatriation and would generate one time increase in tax revenue to help pay for the lowered tax rates. The challenge facing Congress is finding agreement on the other necessary changes to existing tax deductions, tax credits and other provisions that must be eliminated to reach \$1.5 trillion. The most controversial of those currently on the table is at the proposal to reduce or eliminate the federal deduction for State and local taxes.

## BUDGET CAPS

Also among the year-end priorities are an amendment to the Budget Control Act to avoid "sequestration" by revising the budget caps adopted in 2013 for defense and domestic spending. There is strong support in Congress, mostly among the Republicans, to substantially raise defense spending to \$640 billion from the current cap of \$549 billion and reduce the domestic spending cap from the current level of \$516 billion. The proposed reductions are opposed by Democrats.

Agreement on the caps between the House and Senate are critical to set the final spending levels for the twelve

appropriations bills. Unlike the adoption of the Budget, modifying the Budget Control Act to set the defense and domestic spending levels and passage of the twelve appropriations bills is subject to filibuster and would require 60 votes in the Senate. Thus, at least eight Democrats are needed to support an amendment to set the budget caps and adopt twelve appropriations bills and avoid a filibuster.

### FY 18 APPROPRIATIONS PROCESS

Since revised budget caps were not agreed to in the House and Senate in time to guide the appropriations process, the House and Senate Appropriations Committees took different paths for setting spending levels for each bill for FY 18. The House Appropriations Committees assumed an increase to \$621 billion in FY 18 for defense and a reduction of \$5 billion from FY 17 for a cap of \$511 billion for domestic spending. The Senate Appropriations Committee marked-up FY 18 appropriations bills relying on the FY 17 budget caps.

Congress was unable to pass all twelve bills by September 30th. Anticipating that would be the case, President Donald Trump reached an agreement with Senate Democratic Leader Charles Schumer (D-NY) and House Minority Leader Nancy Pelosi for a short term extension of the Debt Limit and a short term Continuing Resolution that both expire on December 8th. Thus, Congress must now reach agreement on the spending caps and approve funding for all twelve appropriations bills by December 8th to avoid a government shut down. Expect that Congress will further extend the FY 18 Continuing Resolution beyond December 8th more than once as they struggle to reach agreement on the spending caps.

### DEBT CEILING

The Debt Ceiling was first established in 1917 and the requirement for the President to receive permission from Congress to incur debt first happened in 1939. President Trump, as well as Democratic leadership in the House and Senate support eliminating the requirement to have regular votes in Congress to extend the Debt Limit. President's historically oppose the vote to raise the Debt Limit because Congress uses the votes to engage in a political debate about federal spending and often pushes the government to the brink as it seeks to avoid defaulting on the debt.

However, Republicans strongly oppose any such change since they view the Debt Limit vote as an opportunity to exert pressure on Congress to constrain spending. Further, the Debt Ceiling Extension vote has been used by Republicans to rail against government spending and amendments are frequently offered to cut spending in exchange for their support for a debt limit extension.

### CONCLUSION

Expect Congress to reach a "grand bargain" prior to the Christmas holidays that packages a Debt Limit Extension, spending caps for FY 18 and FY 19 and an Omnibus Appropriations bill that funds the federal government through September 30, 2018. If Congress agrees to a modest increase in domestic spending, expect that the additional General Fund revenues could be used in the Transportation, Housing and Urban Development bill to fund the Capital Investment Grants program at or near the \$2.3 billion authorized in Fixing America's Surface Transportation (FAST) Act. and restore funding for Amtrak to the FAST Act authorized level of \$1.6 billion for the Northeast Corridor and the National Network. The House and Senate both fully fund the other transit formula and discretionary grant programs based on the FAST Act authorized levels.





# NEC FUTURE

## FRA'S INVESTMENT PLAN FOR THE NORTHEAST CORRIDOR

In July 2017, the Federal Railroad Administration (FRA) released the Record of Decision (ROD) for NEC FUTURE, the FRA's comprehensive plan for the Northeast Corridor (NEC) from Washington, D.C., to Boston, MA. The ROD describes the Selected Alternative, a vision for the NEC that prioritizes improvements to the existing NEC, brings it to a state of good repair, and supports growth in inter-city and commuter rail service to address passenger rail needs through 2040 and beyond. The ROD marks the completion of the Tier 1 environmental review process that began in 2012 and reflects feedback from the public and numerous stakeholders along the corridor.

### THE SELECTED ALTERNATIVE:

- Improves rail service, setting corridor-wide service and performance objectives for frequency, travel time, design speed, and passenger convenience;
- Modernizes NEC infrastructure corridor-wide, increasing reliability;

- Expands rail capacity with additional infrastructure between Washington, D.C., and New Haven, CT, and between Providence, RI, and Boston, MA, as needed to achieve the service and performance objectives, including investments that increase speeds and eliminate chokepoints, and

- Calls for a planning study in Connecticut and Rhode Island to identify additional infrastructure between New Haven and Providence as needed to achieve the service and performance objectives.

Increased capacity and service on the NEC will support the economic vitality of the Northeast with expanded access to jobs, better connections between urban centers, and a more resilient rail network. The Selected Alternative also supports coordinated, enhanced operations to improve the passenger experience.

The ROD does not approve construction or funding, but provides a framework to inform project-level Tier 2 environmental and engineering studies on the NEC. The pace



and phasing of projects to advance the Selected Alternative will depend on many factors, including decisions by the NEC railroads and Northeast states, the availability of funding, market conditions, and practical operating constraints.

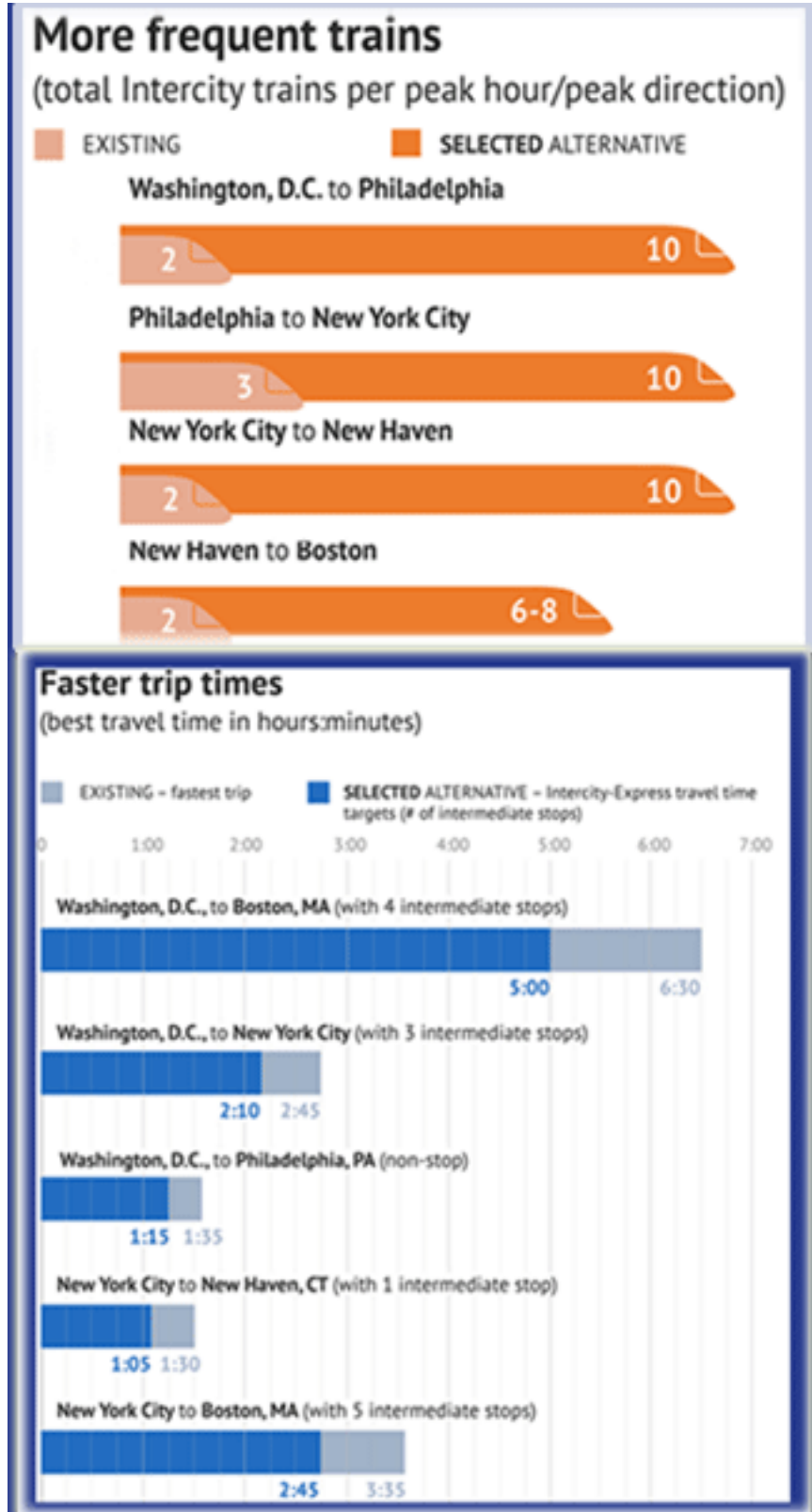
The next step is developing a plan for implementation of the Selected Alternative. For more information on the NEC FUTURE plan, visit [www.necfuture.com](http://www.necfuture.com).

SIDEBAR:

Service and Performance Objectives for the NEC

The FRA's Selected Alternative for NEC FUTURE incorporates corridor-wide service and performance objectives for train frequency, travel time, design speed, and passenger convenience. These include express travel time targets of 2 hours 10 minutes between Washington, D.C. and New York City (with 3 intermediate stops) and 2 hours 45 minutes between New York City and Boston, MA (with 5 intermediate stops).

Here are two possible images from the infographics on the website:



# SIEMENS' CHARGER LOCOS

## A REVOLUTION IN AMERICAN PASSENGER RAIL

Contributed By: Eric Peterson

On a recent trip to California I had the opportunity to tour Siemens' Sacramento rail manufacturing facility, and witness the construction their new Charger locomotives, the first high-speed passenger locomotives to receive Tier IV emission certification from the Federal Railroad Administration (FRA).

It was an amazing experience. In the middle of California, an area one thinks of as an agrarian hub, Siemens employs over 1,000 craftsmen, engineers and machinists to literally handcraft each of these next generation locomotives, giving new energy to America's passenger rail renaissance.

The new Charger locomotives are being built as part of a multi-state procurement that was mandated under the Passenger Rail Investment and Improvement Act of 2008 (PRIIA). Under section 305 of the act, Amtrak, the states, the Federal Railroad Administration (FRA) and the passenger rail equipment manufacturing industry were directed to establish the Next Generation Corridor Equipment Pool Committee (NGEC) to develop standardized specifications in order to streamline the process for designing and obtaining next generation passenger rail equipment purchased with federal funding.

As the result of a highly collaborative, multi-level negotiation and approval process, the NGEC established and implemented standard specifications for acquisition, financing and management of passenger rail equipment. The Charger, designed and built to the NGEC's specifications for high performance diesel electric passenger locomotives is just one of six specifications. Other specifications determined by the NGEC included single and bi-level passenger rail cars, single level train sets, diesel multiple units, and dual-mode locomotives.

Anticipated benefits from the adoption of these standards include lower operating and maintenance costs, and extended vehicle life expectancy. In a recent publication, OneRail observed that these standards "spark domestic production, invigorate supply chain and create high-wage jobs" because they add predictability thereby revitalizing the American passenger railcar manufacturing industry.

These standards are serving as a catalyst to connect passenger railcar builders with U.S. suppliers to achieve 100% Buy America goal. Indeed, in their announcements about the Tier IV Charger locomotive, Siemens noted that, "The Buy America-compliant Charger locomotives are being built at their Sacramento facility, and that all main components of the new locomotive are produced in Siemens plants in the United States – including traction motors and gearboxes in Norwood, Ohio and propulsion containers in Alpharetta, GA. The diesel engines are manufactured by Cummins in its Seymour, Indiana plant, and Siemens has established a robust and diverse base of U.S. suppliers across the country to support production of the Charger locomotives. Transformers and alternators are supplied out of Florida, brake components out of Maryland, diesel engines from Indiana, HVAC systems out of Nebraska, and steel and fabrication parts out of California and Oregon.

At a cost of approximately \$6 million each, the Charger locomotives are powered by a high-performance, environmentally friendly, 4,400 horsepower-rated Cummins QSK95 diesel engine, and are designed to operate at speeds up to 125 miles per hour.

According to a recent joint statement from Caltran and Siemens, "the Charger locomotives are equipped with



electronically-controlled regenerative braking systems that use energy from the traction motors during braking to feed the auxiliary and head-end power systems to minimize fuel consumption. Also, the new Charger locomotives, using the QSK95 Cummins engine, provide a 16% improvement in fuel efficiency over the non-Tier 4 certified locomotives that the Charger will replace in Washington and California.” Siemens notes that the wide-body, single-cab design, is suited for push/pull operation. Other features of the Charger include enhanced operability with a high level of component redundancy, and faster maintenance for optimum service availability.

The powerful diesel-electric operation allows for better acceleration, cleaner emissions, and low noise levels for passengers on-board and waiting at the platform. The Chargers also feature an attractive streamlined design and smoother traction control which results in better ride quality for passengers.

The core of the control system is the multi-vehicle-bus, interfacing with locomotive subsystem control computers, all the I/O stations as well as the man-machine-interfaces, such as controls and displays on the engineer’s console. This locomotive has cab signaling, positive train control and train radio.

The locomotive truck has a center pin traction pivot design, offering a low connection to the carbody. The truck frame is an integral welded structure.

The locomotive propulsion unit consists of a pinion hollow shaft drive with traction motors that are fully suspended and gearboxes partially suspended for improved stability and ride quality. The primary and secondary suspension springs utilize the flexicoil system, a well-proven design used on hundreds of Siemens trucks worldwide. A triangular tie rod assures stable wheel set guidance. Use of pivot elements and lateral mounting of secondary suspension springs significantly reduces

the rotation stiffness of the truck, resulting in considerable reduction of wheel and rail wear.

The Charger’s machine room layout is based on the Siemens European Vectron locomotive, providing the benefit of a clean and spacious design, successfully proven under various operating conditions in applications worldwide.

To further enhance reliability and improve maintenance, all wiring, cabling and piping is routed under the middle aisle walkway within the locomotive machine room for easy access and protected from external elements.

In total, 71 Chargers have been ordered in what Siemens hopes is the first of several tranches of environmentally friendly, Buy-America compliant locomotives that will change the speed, reliability, and cost of passenger rail service in The United States.

The new locomotives are already in revenue service in California and the Midwest, and will soon go into revenue service in the Pacific Northwest and Florida.



# APTA PRESS STANDARDS

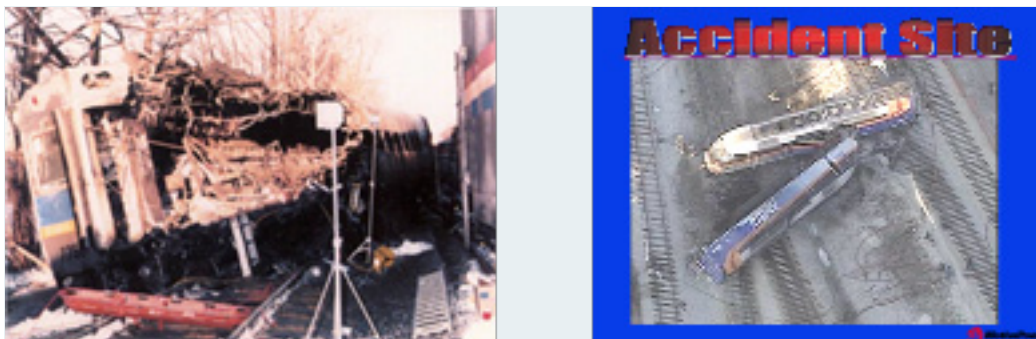
## NEW RULES FOR TIER 3 TRAINSETS

APTA's Standards Program has been a powerful force in the passenger industry spanning from Commuter Rail equipment to Information Technology issues. APTA's Passenger Rail Equipment Safety Standards (PRESS) program was established in 1996 in response to the AAR dropping passenger standards and the FRA approaching APTA to develop passenger equipment standards. These standards are predominantly rolling stock equipment standards for Commuter and High-Speed Rail operations. The PRESS efforts and resulting documents have been invaluable towards increasing passenger safety.

APTA is re-energizing the PRESS document renewal process and is seeking active participation in all the six (6) working groups. These working groups are:

- Mechanical (couplers, wheels, axles, trucks, etc.)
- Construction and Structural (carbody structure, seats, tables, attachment strength, etc.)
- Passenger Systems (emergency signage, lighting, communications, etc.)
- Electrical (cables, wires, insulation integrity, etc.)
- Inspection and Maintenance (routine inspection, maintenance, testing, etc.)
- Wheel/rail interface (interaction of vehicle and track system)

A prime example of the increase in safety associated with these standards is witnessed by two (2) accidents in the past:



This past year, APTA has created three (3) new standards, renewed ten (10) standards and is in process of creating seven (7) new standards and renewing a host of other standards and recommended practices. The document renewal process will benefit from active participation from the railroads, consultants, suppliers and vehicle manufacturers. These standards greatly benefit the industry by reducing costs, increasing standardization and safety.

To get engaged in this conversation – please email Mr. Narayana Sundaram at [nsundaram@apta.com](mailto:nsundaram@apta.com) or call him at (443) 850-4269.

# Snippets

California High-Speed Rail Authority's Board of Directors approved the awarding of a contract for Early Train Operator services to DB Engineering & Consulting the U.S. based subsidiary of German rail giant Deutsche Bahn. The Early Train Operator will assist the Authority with planning, designing and implementing the nation's first high-speed rail program. The contract will be performance based, with a not-to-exceed amount of \$30 million dollars for the first phase of the contract. The Authority anticipates issuing a notice to proceed for this contract in the coming weeks.

The Olympic Winter Games PyeongChang 2018, engines are revving up as the KTX high-speed rail link enters its final days of testing before opening for reservations on 1 December. With travel times ranging from 1 hour 30 minutes to two hours depending on departure and arrival stations, the trains offer Olympic fans accessible day trips from Seoul. A total of 51 trains are expected to be available to spectators daily during Games time. Each train can accommodate up to 410 passengers, allowing nearly 21,000 people to easily commute to the Alpensia and Gangneung venue clusters for each day of the Games.

As All Aboard Florida's Brightline prepares to launch service between West Palm Beach and Miami, a proposed bill regulating the company's passenger trains and similar high-speed rail projects cleared its first hurdle on November 14th-winning the support of a Senate committee.

The decision came as All Aboard Florida officials said the company is set to start construction early next year on the second phase of its project connecting West Palm Beach and Orlando. Introductory service between West Palm Beach and Miami is set to begin by the end of the year - pending price structure and train schedule.

# TX-OK CORRIDOR ADVANCES

Texas Department of Transportation (TxDOT) recently completed a federally funded study to determine the feasibility of passenger rail service between Oklahoma City and South Texas. TxDOT is recommending the proposed rail passenger project be advanced to the next phase of project development, allowing for continued exploration of the proposed route. The \$7 million Texas-Oklahoma Passenger Rail Study covered an 850-mile corridor broken into three segments: Oklahoma City to Dallas-Fort Worth; Dallas-Fort Worth to San Antonio; and San Antonio to South Texas.

The current study determined passenger rail service up to 220 mph between Dallas-Fort Worth and San Antonio is feasible. The study also revealed the possibility of having passenger rail service up to 125 mph from San Antonio to the Rio Grande Valley --including Laredo to Monterrey -- Mexico was feasible. The study also found improved Amtrak-type

service between Dallas-Fort Worth and Oklahoma City was feasible at conventional speeds.

The next step would be a project-level environmental study to determine actual routes and environmental impacts of the service before construction and start of service. At this point a private developer could step forward to determine future project possibilities.

Texas Transportation Commissioner Jeff Austin III said, "The advancement of this study is a positive step forward. The study provides a foundation upon which the private sector, local stakeholders and our federal partners can consider opportunities to work together to potentially advance this project. As the population of Texas continues to grow, we will continue to work with various partners to explore all opportunities to keep Texans moving. Options such as passenger rail service may be one way to keep up with growing demand."



## PASSENGER RAIL STUDY

# ROI CALCULATION

## ADDRESSING ARRA HS&IPR FUNDING SERVICE OUTCOMES

A new report released by the APTA's HS&IPR Committee provides a framework for assessing the return on investment (ROI) associated with high-speed and intercity passenger rail projects (HSR&IPR). This seminal report called "Framework for Assessing the ROI for High-Speed and Intercity Rail Projects" goes beyond the confines of the classic "benefit cost analysis" – which focuses on travel time and cost efficiency impacts.

This new analysis considers the full range of local community effects, regional connectivity and global competitiveness effects, and broader consideration of the public's desire to meet and exceed longer term environmental, economic and mobility goals for future generations.

"For communities to get a complete picture of high-speed and intercity passenger rail and its benefits, the analysis should involve a combination of methods including a cost-benefit, an economic impact, and a social impact analysis," said Anna Barry of the Connecticut DOT and the Chair of the APTA High-Speed and Intercity

Passenger Rail Committee. "This study brings important measurement elements together which will help reveal the true value of these rail projects."

Intercity passenger rail demand in the United States has shown an unprecedented surge in the new millennium, according to the authors of the report. Amtrak, the primary intercity rail service provider, reported an annual ridership of more than 31 million in 2016, which is 1.5 times what it was in 2000.

With the nation's highways and airways stressed to near capacity, many Americans are discovering that intercity passenger rail, and the promise of high-speed passenger rail service are attractive alternatives. Prominent examples include the California, Texas, Midwest, Florida and North Carolina to Virginia initiatives the study authors noted.

"We reviewed 47 prior studies and identified a large set of benefits related to economic, social, and environmental impacts that can apply

specifically to high-speed rail and intercity rail projects," said Charles Quandt of Quandt Consultants and a member of the Technical Review Team. "This study lays out a framework for quantifying and monetizing benefits from policy perspectives that are relevant for constructing a business case for these rail projects."

The study authors emphasize that while there is continuing interest in HSR&IPR projects, this report addresses the wide disparities in how project investment benefits are measured. It goes beyond prior studies by providing consistency as to what benefit and cost elements to consider.

The "Framework for Assessing the ROI for High-Speed and Intercity Rail Projects" is an initiative of APTA's High-Speed and Intercity Passenger Rail Committee. The report was authored by The Urban Transportation Center at the University of Illinois at Chicago, with EDR Group, Boston, MA. To view the full report, go to [www.apta.com/HSRROI](http://www.apta.com/HSRROI).



# IN THE SPOTLIGHT

## YOU SHOULD GET TO KNOW US



**JAMES P. REDEKER**

CHAIR – AASHTO - RAIL POLICY COUNCIL

“Passenger and freight rail systems are facing extraordinary regulatory, safety, capacity and funding challenges. These issues can now be addressed in new forum provided by the Rail Policy Council of AASHTO, with the goal of influencing national policy related to rail. This unique opportunity, afforded by the new modal reorganization of AASHTO, can facilitate the identification and implementation of rail policies and utilize the resources of AASHTO to advocate for the future of passenger and freight funding.”

DOT  
Commissioner  
- Connecticut



**STEVE HEWITT**

PROGRAM MANAGER

“The success of the Section 305 Next-Generation Equipment Committee (NGEC) in developing and maintaining standardized passenger rail vehicle specifications that will reduce equipment costs, create sustainable jobs, and help to reinvigorate the passenger rail equipment industry in the U.S., can be directly attributed to the incredible collaboration and selfless cooperation among the States, Amtrak, FRA, and over 240 members of the rail manufacturing and supply industry from across the nation.”

NORTHEAST  
CORRIDOR  
COMMISSION

S305 NEXT  
GENERATION CORRIDOR  
EQUIPMENT POOL  
COMMITTEE



**CAROLINE N. DECKER**

VICE PRESIDENT

“Amtrak is a critical part of the national transportation network, and we are focused on continuing to transform our business to strengthen our safety culture, improve operational efficiencies, and enhance and modernize our customers’ experience. Demand for passenger rail service continues to grow, but capital funding is not keeping pace with Amtrak’s aging infrastructure and fleet. Working with Congress, the Administration, state partners and key stakeholders we must identify reliable, predictable funding sources that can support significant investments in our nation’s passenger rail network.”

AMTRAK

GOVERNMENT AFFAIRS  
AND CORPORATE  
COMMUNICATIONS

# HIGH-SPEED RAIL IS A (VIRTUAL) REALITY IN CALIFORNIA!

Contributed By: Bart Ney and Dominic Spaethling

The Association for California High-Speed Trains (ACHST) launched "the California Connected eXperience," a virtual reality simulation of California's new High-Speed Rail System at the Self Help Counties' annual "Focus on the Future" event in San Francisco on October 30th. The first such simulation for high-speed rail in California was constructed by a small team of passionate professionals to prove that virtual reality can be a powerful and scalable tool to communicate the virtues of complex but important public projects.

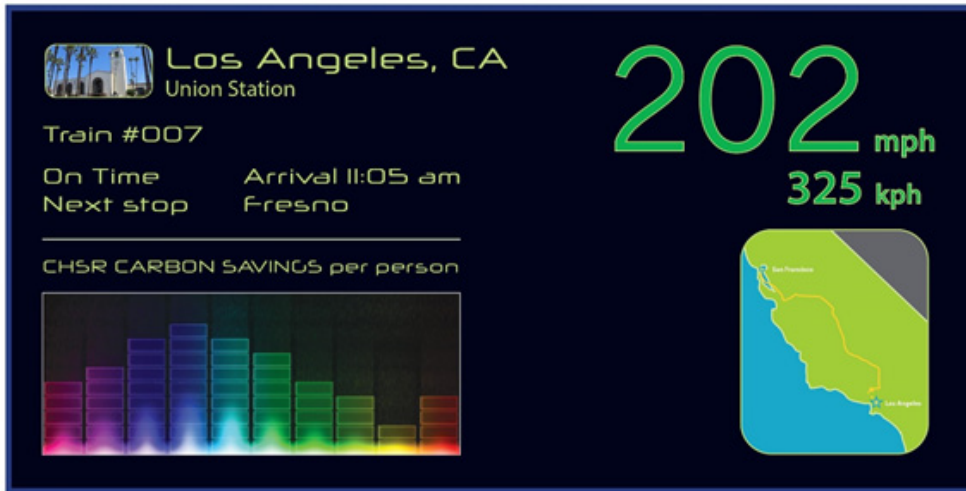


James Wedding of Autodesk with California Senator Jim Beall with VR Headset at Focus on the Future Monday, October 30.



The simulation puts the viewer in the pilot's seat of a High-Speed Train and allows them to walk around inside the vehicle.

Gazing out the windows inside the train the landscape moves by at over 200 mph.



Graphic readouts show current speed in both mph and kph, and pertinent trip status information like arrival time, a real time map and next stops as well as a spectrum analyzer depicting carbon savings per person.



Also as part of the theme of the simulation viewers can choose to visit four different California locations in Virtual Reality. For a few seconds one can experience the California Redwoods, Santa Monica beach, a vineyard in Temecula or the San Francisco Embarcadero. The simulation is designed as a proof of concept that can be expanded upon to help constituents understand the project.

Working together for ACHST to help support high-speed rail in California WSP, Autodesk, HNTB, Siemens and Alta Vista Solutions partnered to realize a vision originally conceived by Doug Eberhard an Autodesk employee and industry pioneer who passed away before the project was completed.

Come and check out this exciting exhibit at the High-Speed Rail Policy Forum, November 29th, 2017 at the APTA headquarters in Washington , DC!



# TRB ANNUAL MEETING

INTERCITY PASSENGER RAIL COMMITTEE (AR010) HOSTS 10 SESSIONS; PRESENTS 13 PAPERS

The Transportation Research Board's 2018 annual meeting will feature 10 sessions sponsored by the Intercity Passenger Rail Committee (AR010) beginning with a half day workshop on Sunday morning, January 7th, at 9:00 a.m., that will look at the lessons learned, the achievements made and the plans that were supported by the \$10 billion grant program authorized and funded under the 2009 American Recovery and Reinvestment Act (ARRA).

The workshop, which will be held in Room 143 C of the Walter Washington Convention Center in Washington, D.C., will feature three separate panels that will include representatives of states and corridors that received ARRA grants, federal and state transportation agency representatives who administered and managed the ARRA grant program, and inspectors general from federal agencies who reviewed, reported and recommended how the grant program was administered, the funds used and ways the initiative could be more successful in the future.

Other AR010 sessions during the TRB annual meeting include podium presentations on the benefits of intercity passenger rail (Session 295), and access to intercity passenger rail (Session 502).

The committee will also host a poster session on current innovations in intercity passenger rail services on Tuesday, January 9th in Hall E of the Convention Center.

The full committee will meet on Monday afternoon, January 8th, at 1:30 p.m. in Capitol Room in the Marriott Marquis Hotel, adjacent to the

Convention Center.

The subcommittee on socioeconomic and financial aspect of intercity passenger rail (AR10 (2)) will meet on Monday morning, January 8th, at 10:15 a.m., in the L'Enfant Plaza Room in the Marriott Marquis Hotel.

The subcommittee on intercity passenger rail intermodal interface ((AR10 (1)) will meet on Tuesday morning, January 9th, at 10:15 a.m., in the Woodley Park Room of the Marriott Marquis Hotel.

And the subcommittee on intercity passenger rail research (AR10 (3)) will meet on Tuesday afternoon, January 9th, at 3:45, in the Treasury Room of the Marriott Marquis Hotel.

The Rail Capacity Joint Subcommittee will meet on Tuesday evening, January 11th at 7:30 p.m., in the Treasury Room of the Marriott Marquis Hotel, and the Shared Rail Corridors and Facilities Joint Subcommittee will meet Wednesday morning, January 10th, at 10:15 a.m. in the Mount Vernon Square Room of the Marriott Marquis Hotel.

All attendees at the TRB annual meeting who have an interest in intercity and high-speed passenger rail service are encouraged to attend all or any of the sessions, and to take an active role in the discussions of current and future issues facing the industry.



# TRB WORKSHOP

## TO ADDRESS ARRA HS&IPR FUNDING SERVICE OUTCOMES

Contributed By: By Jon Dees, AICP, Rail Planning Consultant, Rail Division, North Carolina Department of Transportation

The Transportation Research Board (TRB) Intercity Passenger Rail Committee (AR010), will host a half day workshop on Sunday morning, January 7, 2018 at the TRB Annual Meeting, to explore the impact of the American Recovery and Reinvestment Act (ARRA) funding on America's passenger rail program and the lessons that may shape future funding initiatives to support the renaissance of passenger rail, especially the development of high-speed passenger rail service in the U.S.

The January 7th workshop is entitled, "American Recovery and Reinvestment Act (ARRA) and High-Speed Rail: What have we accomplished?" It will explore the question of whether the high-speed intercity passenger rail (HSIPR) initiative launched by President Obama through ARRA a boondoggle or a demonstration of good stewardship of public funding?

When pundits talk about the future of Intercity Passenger Rail (IPR) and the evolution of high-speed

passenger rail service in the United States, many view the ARRA initiative as a lost opportunity or "valiant attempt" to provide a transformative travel option to the American public ("Time is Up," *Trains*, October 2017, p. 55). While assessments like that are common, there is little recognition of the impact ARRA funding has had on projects actually completed, or about to be completed.

The most rapid and obvious impacts of the ARRA have gone to existing IPR services, such as the Downeaster and Vermonter, where an admirable pace of project development and implementation improved existing services. Other recipients are about to start new service like the Cascades, which begins this December, the new CT rail service next year, and an additional Piedmont round trip in mid-2018. In other states, capacity and speed improvements continue as additional work has been identified.

The workshop will include three

panels that will address ARRA funding from the perspective of government watch dogs like the Government Accountability Office (GAO) and the Inspector General of the U.S. Department of Transportation and Amtrak, from the perspective of those who administered and managed the ARRA grant program at the federal and state levels, and from the perspective of grant recipients and passenger rail service providers.

Practitioners in every phase of the process will offer insight into program deliverables and challenges, as well as outcomes yet to be achieved.

The TRB is a division of the National Research Council, which serves as an independent advisor to the president, the congress and federal agencies on scientific and technical questions of national importance. TRB is organized around the various transportation modes as well as crosscutting issues such as finance, environmental concerns and planning processes.

# 2018 CALIFORNIA STATE RAIL PLAN

RELEASED FOR PUBLIC COMMENT

On October 11th, Caltrans released its new 2018 California State Rail Plan (and Appendix) which offers an exciting new framework for planning and implementing California's rail network for the next 20 years and beyond. The Rail Plan is a strategic plan with operating and capital investment strategies that will lead to a coordinated, state-wide travel system.

The Rail Plan outlines a vision and strategic implementation plan so that by 2040, Californians will have access to an integrated, state-of-the-art rail system that will revolutionize personal mobility and enhance quality of life. It will increase safety, improve the environment and livability and enhance the economy.

The Rail Plan is a companion to the 2040 California Transportation Plan, and will position Caltrans to respond to legislative requirements of Senate Bill 391. This bill requires that the California Transportation Plan meet the state's climate change goals under Assembly Bill 32 and Senate Bill 375. Key strategies for achieving maximum feasible emissions reduction to attain

California's greenhouse gas goals include the construction of high-speed rail and expansion of public transit, commuter rail and intercity rail systems, and will provide an assessment of greenhouse gas emissions for the planned future rail systems.

## BACKGROUND:

The creation of a railroad network in California in the 19th century connected the state to the rest of the nation with what was then the highest speed form of transportation. Continued rail investments in the 20th century helped California's rapid economic development. For the 21st century, California is again poised to put "high speed" back in rail. By 2040, Californians will have access to an integrated, state-of-the-art rail system that will revolutionize personal mobility and enhance quality of life.

California is the sixth largest economy in the world, with an annual gross domestic product of over \$2.4 trillion and a population projected to increase to approximately 50 million by 2050,

causing continued pressure on the state's aging transportation infrastructure. To meet the challenges of this growth and avoid the negative ramifications, the Rail Plan will help define a more sustainable transportation system for the future. It will identify rail transportation alternatives that can provide relief to highway and air transportation congestion.

Improvements and expansion of California's rail system will have a positive effect on the future mobility and environmental health, and economic vitality of the state. It is envisioned that greater use of the rail system will take millions of cars and trucks off the road that would otherwise be additional contributors to air pollution. California passenger rail ridership (intercity and commuter) increased by 44% between 2005 and 2015. Ridership numbers continue to grow each year and greater use of rail will contribute to improved air quality by reducing vehicle miles traveled and vehicle emissions. It will also reduce fuel consumption and can reduce the need for highway construction.

The Rail Plan offers a statewide vision describing a future integrated rail system that provides comprehensive and coordinated service to passengers through more frequent service, and convenient transfers between rail services and public transit. This integrated system uses the existing rail system more efficiently; expands the coverage and mix of rail services in several key corridors; scales proposed services to meet anticipated market demand; and facilitates network-wide coordination through scheduled, or “pulsed,” transfers. For passengers, this integrated system means a faster, more convenient and reliable door-to-door travel experience. For freight movements, this integrated system means better system reliability and a clear pathway to growing capacity, which leads to economic benefits that reverberate locally, regionally and nationally.

The Rail Plan anticipates exciting new developments in California’s rail system, and presents a future vision for statewide rail travel that builds on the state’s existing conventional rail, along with opportunities provided by high-speed rail (HSR) and Transit. Leveraging emerging technologies such as electrification and advanced train control systems can help make rail travel more efficient, faster, safer and more reliable, while making the existing system more cost-effective to operate and channeling savings to new capital projects and system enhancements.

The Rail Plan assesses a changing funding landscape, including the influence of newly funded Senate Bill 1 (SB1) transportation package and California’s Cap-and-Trade Program for reducing GHG emissions.

The planned rail system envisioned in the Rail Plan will improve Californians’ quality of life by mitigating roadway congestion, reducing vehicle emissions, supporting compact land use and offering convenient, reliable and auto-competitive alternative travel and goods movement. The Rail Plan also addresses issues of access – the availability of opportunities within a certain distance – as well as mobility – the ability to move between activity sites.

A statewide rail system offers a viable alternative to driving for both local and long-distance trips for all populations, including those who lack access to or cannot afford automobiles and for people who choose not to drive.

The Rail Plan vision provides a technical framework for realizing the full potential of our existing rail network, and using the current slot times on freight heavy routes in a fully integrated statewide passenger service that draws on detailed input and guidance from key stakeholder initiatives and leadership. In partnership with those same stakeholders, this vision can be achieved in phases, with different levels of integration activated as improvements are delivered over time, and within the funding capacity

provided by SB 1 for the first ten years of the plan. The Rail Plan provides for incremental service planning and capital investment decision-making with an ultimate network vision in mind: it offers leadership toward a more integrated, convenient, and efficient statewide rail system.



THE PATH TO OUR DESTINATION IS NOT ALWAYS A STRAIGHT ONE. WE GO DOWN THE WRONG ROAD, WE GET LOST, WE TURN BACK. MAYBE IT DOESN'T MATTER WHICH ROAD WE EMBARK ON. MAYBE WHAT MATTERS IS THAT WE EMBARK.

# SIEMENS TO BUILD

ORIGINALLY TO BE BUILT BY NIPPON-SHARYO

Contribution By: Ryan Griffin-Stegink

Great news for riders in California and the Midwest: work is resuming on the multi-state order for 137 new passenger rail coaches for Amtrak corridor trains. After months of speculation and chatter, Caltrans formally announced that the coaches Nippon-Sharyo was slated to build will instead be provided by Siemens.

Five years ago, Caltrans and the Illinois Department of Transportation (IDOT) awarded the contract for the new coaches to Sumitomo Corp. of America. The new cars were to be a bi-level design that followed specifications set out by a next-generation equipment committee of Amtrak and state transportation officials. The manufacturing was subcontracted to Nippon-Sharyo, and was to take place in Rochelle, Illinois.

In 2015, a prototype car failed a critical safety test, bringing the manufacturing process to a halt. Passengers and rail advocates have been holding their breath since then, awaiting the official announcement that finally came this month.

Sumitomo will substitute Siemens as the manufacturer for the new coaches, which will be single-level instead of bi-level. The coaches will be assembled in Sacramento, California, and are expected to be similar to the cars Siemens is delivering to the new Brightline service in Florida.

These modern, single-level coaches represent a major step forward for passenger trains in the U.S. The entire train will be ADA accessible. All aisles and passages are wide enough to accommodate wheelchairs, which also makes

them easier to navigate for passengers with luggage or bikes. The design includes overhead luggage storage and bike racks.

The design focuses on passenger comfort with large windows, power outlets, Wi-Fi, and a variety of seating options, including work tables. The restrooms are spacious and entirely touch-free.

Although Siemens designed the Brightline coaches to be substantially compliant with the next-gen committee's specifications, there are some details that will need to change for the Caltrans/IDOT order. The Brightline cars are designed to meet a high-level platform, but these coaches will need stairs and an accessible lift to serve the low platforms found in California and the Midwest.

Caltrans and IDOT previously selected Siemens to provide new diesel locomotives for their Amtrak corridor trains. Some of these new Charger locomotives are already in service.

Of course, the state corridor trains are not the only ones that need new equipment. Amtrak must find replacements for the Superliners it uses for long-distance trains.

At a Rail Passengers Association event in Chicago, new Amtrak President and CEO Richard Anderson made it clear that new rolling stock is a priority for the railroad. In fact, he repeated three times that the Superliners need to be completely rebuilt—or replaced entirely.

The last new Superliner was delivered in 1996, making it





*The amended IDOT/Caltrans contract replaces the original bi-level design seen in this rendering with single-level cars.*

more than twenty years old. Some of the Superliners are nearly 40 years old, and the fleet has already undergone several rehab programs. It's time to retire the Superliners and build a new fleet.

Two-level cars, like the Superliners, have a number of disadvantages. Passengers must navigate a cramped staircase when boarding or leaving the train, which makes station stops longer. People who can't climb stairs are confined to the lower level and are unable to move around the train, because the passageways between cars are on the upper level. They are effectively cut off from some of the best parts of long-distance train travel, like sharing a meal in the diner or socializing in the lounge.

Modern, single-level coaches are safer and more comfortable. They operate as unified trainsets, which allows better management of forces and protection of passengers in case of a collision or derailment. They are strong yet light, allowing them to accelerate quickly and ride more smoothly on rough track.

The sealed passageway between cars in a unified trainset eliminates the hazardous vestibule, which is slippery during rain and snow, and allows cold air into the passenger compartment. Even on a dry day, the meeting of two swaying cars creates moving pinch points that can cause serious injury if a passenger isn't careful.

Modern train designs include locomotives or driving cabs on both ends. This allows a train to simply head back the

way it came when it reaches its destination, instead of requiring a slow and expensive turn-around move in a yard.

Mr. Anderson is right: Amtrak needs new train equipment to sustain and grow its nationwide network. However, it will not be able to invest in a new fleet without substantial support from Congress.

We encourage Amtrak to look to modern, single-level coach designs for its long-distance trains. And we encourage riders and advocates to ask their legislators to include the necessary funding in the budget.

Learn more about how modern train designs are more comfortable and convenient for riders—and more efficient for operators—at [midwesthsr.org/modern-trains](http://midwesthsr.org/modern-trains)

“A negative thought is like a runaway train on a one-track mind, whilst a loving soul gently lifts the hearts of all mankind.”