High-Speed Intercity Passenger Rail

SPEEDLINES

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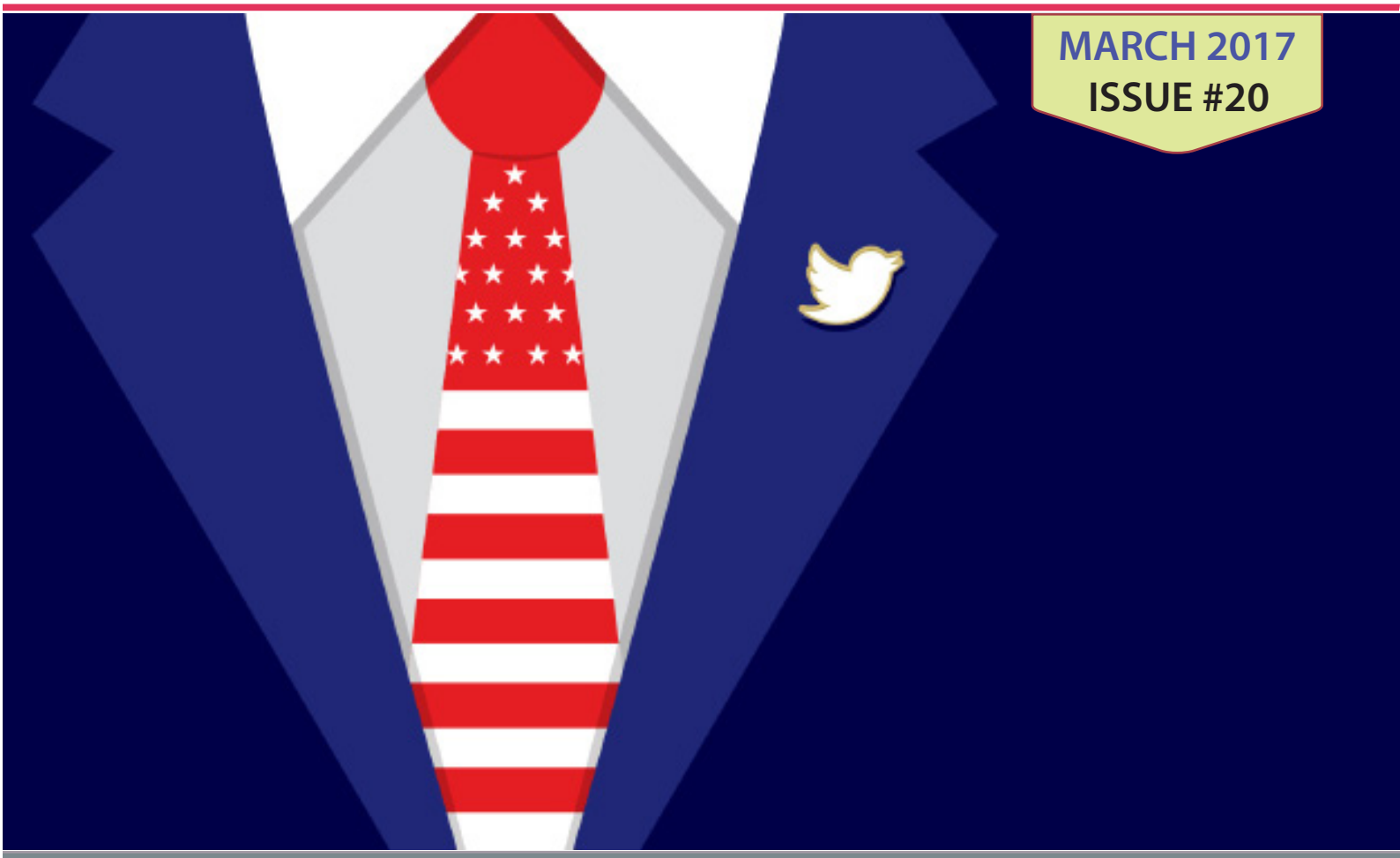

Most Americans agree that our roads, bridges, public transit systems, air and sea ports and water infrastructure are critical national assets that drive growth, jobs, safety, and global competitiveness. What we can't seem to agree on is how to pay for badly needed maintenance and repairs. It's time to stop thinking about infrastructure as a problem, but as an opportunity for bipartisan agreement to invest wisely and carefully in our most critical needs, while eliminating wasteful spending.

Legislative Conference
EDITION

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SPEEDLINES MAGAZINE

ABOVE: *Bilateral Agreement on High-Speed Rail was witnessed by both Prime Ministers during an annual retreat - a significant step linking Singapore and Kuala Lumpur in 90 minutes.*

On the front cover:

Setting the stage for transformative transportation. Trains that travel at least 200 mph may fit into the president's plan for $1 trillion in infrastructure spending.

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Dear HS&IPR Committee & Friends:

I appreciate the opportunity to address you in this issue of Speedlines, our Committee publication that is without parallel in APTA.

On November 30, we conducted the second annual High-Speed Rail Policy Forum (and third annual event overall) at APTA Headquarters. It was well attended with more than 100 registrants. Our program addressed theme - Getting to the Tipping Point – U. S. High Performance Intercity Passenger Rail - from several topical perspectives and points of view.

APTA Chair Doran Barnes and Acting President and CEO Richard White opened the Forum and welcomed our participants and expressed their very positive impressions on the program and the turnout. Later they told me that this Forum is the latest example of the fine work of our Committee, which is the second largest Committee in APTA.

I was pleased to open the Forum program with a Roundtable of High-Speed and Intercity Rail Leadership. It included representatives from FRA, NECC, SCORT, SAIPRC, APTA Commuter Rail CEO's and the NEC Coalition, respectively: FRA Associate Administrator for Railroad Policy and Development Paul Nissenbaum, NECC Executive Director Mitch Warren, Jon Dees, North Carolina DOT, NNEPRA Executive Director Patricia Quinn Virginia Railway Express CEO Doug Allen, and Michael K. Friedberg of Holland & Knight. The panel gave us a well-rounded view of how all of these stakeholders perform their missions and work with each other.

In all, we produced five great sessions and a wrap-up, including the rollout of our Return on Investment (ROI) Study. See the article in this issue of Speedlines.

Your Committee leadership has been at work developing its program for the year, including the agenda for our March 12 (7:30 a.m.) Committee meeting. Our jam-packed agenda includes a Washington D.C. Advocacy Partner Roundtable and meaty discussions of NEC Future, our ROI Study and what we as Committee can do about Federal infrastructure and legislation.

As always, the Speedlines team leaders Al Engel, Ken Sislak and Wendy Wenner of Amtrak have brought you another excellent edition.

I hope you can join us for our March 12 Committee meeting in Washington. And thank you for your interest in the High-Speed & Intercity Passenger Rail Committee.

Anna M. Barry

NOVEMBER RAIL FORUM

TIPPING POINT FOR U.S. HIGH PERFORMANCE INTERCITY PASSENGER RAIL

Three weeks after the November 8th election nearly 150 passenger rail consultants, executives, and academics gathered at the American Public Transportation Association (APTA) headquarters in Washington, D.C. to take stock of how far intercity passenger rail in the United States has come over the past eight years, and to forecast where it may go in the next eight years. Convened as the third annual Rail Forum sponsored by American Public Transportation Association (APTA) and the High-Speed Intercity Passenger Rail Committee, this distinguished group of rail experts discussed the ups and downs over the long road passenger rail 's progress since the enactment of the Passenger Rail Investment and Improvement Act of 2008, and addressed the perceived challenges the industry will face in the years ahead.

Following welcoming remarks from Doran Barnes, APTA's chair; Richard White, acting President and CEO; and Anna Barry, chair of APTA's High-Speed and Intercity Passenger Rail Committee, Al Engel, the committee's vice chair, set the tone and direction for the Forum. It was noted that intercity passenger rail is all about sustainability, that over the past 40 years the mode has endured four waves of evolution, and that we are now in a wave that offers hope for more rapid development and renovation of the nation's passenger rail network, especially higher performing intercity passenger rail.

High-Speed and Intercity Passenger Rail Leadership Round Table

The first session of the policy forum featured Paul Nissenbaum, associate administrator for railroad policy and development at the Federal Railroad Administration (FRA); Mitch Warren, executive director of the Northeast Corridor Commission (NEC Commission); Mike Friedberg, director of the Northeast Corridor Coalition (NEC Coalition); Jonathan Dees representing the North Carolina Department of Transportation and the American Association of State Highway and Transportation Officials' (AASHTO) Standing committee on Rail Transportation (SCORT); Patricia Quinn, executive director of the Northern New England Passenger Rail Authority, representing the States for Passenger Coalition; and, Doug Allen, chief executive officer of Virginia Railway Express (VRE), and vice chair of APTA's commuter rail committee. Anna Barry moderated the round table discussion.

Each of the panelists outlined briefly what their respective organizations are doing to promote the evolution of passenger rail service in the United States. Mr. Nissenbaum referred to FRA's transformation since 2009, when the agency was largely a safety regulatory agency, as remarkable. "Over the intervening years we have developed the capacity to manage the outlay of more than $25 billion in grants for rail improvements, and today we can handle whatever amount of funding may come our way," Nissenbaum said. "Partnerships among multiple dimensions will be the key to getting it done."

The NEC Commission's Mitch Warren noted the progress his organization has made in establishing a cost allocation formula and in establishing investment priorities. "The partnership commission members have created among themselves and the FRA is helping address the improvements needed in the corridor as well as the corridor's $25 billion

backlog of maintenance projects," Warren observed. "For us it's unite or die."

Friedberg told forum attendees that the NEC Coalition is being organized to advocate for the funding needed in the corridor. "Members of the NEC Commission can't lobby for the funding needed, and the FAST Act contained no new funding for passenger rail, so we are organizing the business community in the corridor to educate Congress and state legislatures on the funding needs and the potential benefits of improved passenger rail service in the Northeast Corridor," Friedberg said.

SCORT's Dees observed that states are building partnerships in order to attract more funding and financing to address their respective passenger rail interests. "States are providing leadership, but more outreach is needed," Dees said.

Quinn, a frequent and well-respected passenger rail advocate, said that the members of States for Passenger Rail is a collective voice promoting state-sponsored initiatives primarily focused on formalizing the strategy to support the state reimbursement requirements of Section 209 of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA). Quinn said, "she sees little victory every day that are the result of the leadership and hard work of state rail representatives."

VRE's Allen noted that commuter rail is an important player in efforts to advance intercity passenger rail, and that the partnerships commuter rail organizations have with host rail companies and other intercity passenger rail stakeholders are critical to future advances in the passenger rail service industry.

The panel went on to discuss a number of important issues and features of the current mix of private and public sector stakeholders that are providing leadership and forging the collaboration that is bringing improvement to America's intercity passenger rail network. Nissenbaum said that the word is getting out, the pieces are coming together, but we must continue to tell the story in a way that voters and taxpayers can appreciate. "FRA's role in leadership has its limits. There are others who could and must do better, but FRA will continue to do what it can to promote intermodal cooperation," Nissenbaum said.

Dees observed that there is still much work to be done to help states figure out how to leverage intercity passenger rail to the benefit of their respective economies.

Panel members urged that congressional champions are still needed, and that should be the primary advocacy goal for all stakeholders. "Without these champions, we will never get the funding needed for the Northeast Corridor, or any of the other major passenger rail improvements stakeholders desire," Friedberg said.

Nissenbaum observed that perhaps the best way to win more congressional champions is for passenger rail advocates to listen carefully to what others are saying, and to try to walk in others' shoes.

Status of the Project Pipeline for Passenger Rail: Key Issues

Moderated by Peter Peyser, a Washington-based policy consultant, this session included Jeff Morales, chief executive officer of the California High-Speed Rail Authority (CHSRA); Ray Chambers, executive director of the Association of Independent Passenger Rail Operators (AIPRO); Donnie Maley, director of planning for the NEC Commission; Justin Fox of AECOM; and, Stan Feinsod, Systra.

Peyser initiated the discussion by asking panel members to describe the challenge of presenting the state of high-speed rail in the United States and what it means to the future of our nation to the incoming administration?

Jeff Morales said he would put special emphasis on issues of increasing mobility, providing transportation alternatives, improving air quality, and job creation.

Donnie Maley said he'd point to the Northeast Corridor Capital Investment Plan, which he described as an integrated record of capital project activity and aspirational proposals. He said the plan is intended to facilitate collaboration among stakeholders, support cost allocation, establish criterion for grant eligibility, and place special emphasis on state of good repair, for which he said, "there is still a lack of commitment on the part of the federal government."

AECOM's Fox opined that he would point to five projects around the U.S. that are making a real difference. These projects include Amtrak's Cascade service in the Northwest, the Brightline in Florida, the Texas Central Bullet Train, the Illinois high-speed rail shared corridor between Chicago and St. Louis, and the Michigan Line between Chicago and Detroit.

Ray Chambers said that the four-member AIPRO serves 800,000 passengers each year. His goal is to expand intercity and urban passenger rail service by introducing private competition through public/private partnerships. Chambers said, "we need to convince Congress and the new administration that passenger rail is an integral element of America's infrastructure."

Chambers urged that specific proposals need to be put on

> *Our nation's infrastructure needs are tremendous, and they're growing.*
>
> -U.S. Rep. Bill Lipinski

the table that open the highway trust fund to support the Section 209 state-supported intercity passenger rail program, and promote new models for passenger rail that get private-sector operators to the table early in the process.

Feinsod argued there is need for a new vision that matches the scale of the need. He suggested that the PRIIA Section 301 capital program should be used to support state-supported routes. He said the word "spend" should be purged from the discussion about high-speed rail, and replaced with the word "invest." "Break the big price tag down to individual projects, and find 'the red state vision' for high-speed rail," Feinsod urged.

Passenger Rail Policy and Program Issues for 2017 and Beyond

Moderated by Sharon Green, a member of the APTA board of directors and vice president of HDR/Sharon Greene, and Sasha Page, co-chair of APTA's real estate subcommittee and principal of IMG Rebel, this session included Patrick Fuches, a professional staff member on the U.S. Senate Commerce Committee; Joe McHugh of Amtrak; David Valenstein and Marlys Osterhues from the FRA; and, Mark Polston, deputy director of the Build America Bureau at the U.S. Department of Transportation.

Fuches reminded the audience that for the first time ever the FAST Act included a title on intercity passenger rail…"a great achievement for passenger rail advocates." He noted that there were five key passenger rail issues addressed in the FAST Act including safety, financing, policy, route competition, and Amtrak financial management. He said going forward infrastructure funding would be dependent on decisions made by the Senate Finance Committee regarding tax reform, including a possible infrastructure bank, and he urged the audience to communicate with the House and Senate appropriation committees to raise funding levels for intercity passenger rail closer to the levels authorized in the FAST Act.

McHugh commended the congressional staff for its professionalism and expressed especial appreciation for the reforms adopted in the FAST Act that benefit Amtrak. He said over the years Amtrak made a lot of mistakes trying to achieve the unattainable goal of $0 subsidy, but that the Acela program has helped improve Amtrak's bottom line -- $200 million short of self sufficiency on operating costs; the best in Amtrak's history.

McHugh noted that many of the NEC projects are ready to go. "They just need funding on a reliable and sustainable basis," McHugh said.

FRA's David Valenstein reported that over $1 billion has been spent preparing a variety of passenger rail projects for construction over the last six years. He said these projects represent more than 1 million route miles including many key NEC projects just waiting for funding.

Valenstein noted that FAST Act reforms have helped ease the pre-construction burden by adopting the Federal Highway Administration's project approval process for FRA projects. He recommended that people watch for Federal Register notices of proposed regulatory changes, and provide constructive comments to obtain desired reforms.

Last summer, Secretary Foxx rolled out a new "Build America Bureau" at the Department of Transportation. It's deputy director, Mark Polston defined the bureau's role as a one-stop shop to help project sponsors obtain federal funding. Polston said the bureau is building an outreach component that will screen project for eligibility. He said the bureau will oversee Transportation Infrastructure Finance and Innovation Act (TIFIA) and Railroad Rehabilitation & Improvement Financing (RRIF) programs, and will work to better align the departments other credit programs to address transportation priorities. Specifically, he said that applications that address new or improved passenger rail service and transit oriented development (TOD) will be eligible for TIFIA and RRIF consideration, and that planning and permitting will be addressed in future project agreements.

Polston said he anticipates further reforms to the entire credit and grant review process, and that future projects will include multiple funding partners.

APTA Return on Investment Report: A Blueprint for Quantifying the Economic and Social Benefits of Passenger Rail Projects

Breaking with the policy and leadership discussions of the previous and subsequent sessions, the forum audience received an update from Charles Quandel, Quandel Consulting; Stephen Schlickman, University of Illinois, Chicago; P.S. Sriraj, University of Illinois, Chicago; Glen Weisbrod, Economic Development Research Group; and, Bo Zou, University of Illinois, Chicago, on the status and intent of the APTA-sponsored research project, "APTA Return on Investment Report."

Quandel said the project, which is sponsored by a number of APTA members, is to develop a uniform methodology for determining the return on investment in public infrastructure. He noted that this effort is very different from traditional cost/benefit analysis because it attempts to establish a uniform matrix for measuring a number of factors not usually covered by cost/benefit analysis. The paper is anticipated to be published during 2017.

Rail Research, Communications and Media

The last session of the forum addressed how the intercity passenger rail community is currently communicating with the public and policy decision makers, and what it needs to do going forward to ensure that its mission and objectives are more widely embraced. The session was moderated by Dominic Spaethling, chair of the APTA high-speed and intercity passenger rail programs subcommittee, and vice president, HNTB; Peter Schwartz, FRA; Marc Willis, FRA; Lawrence Goldstein, Transportation Research Board; Anne Canby, OneRail Coalition; and, Bill Vantuono, editor-in – chief, Railway Age.

Schwartz noted that the FRA does applied research for regional planning efforts, even though in PRIIA the FRA was directed to develop a national rail plan. He said the emphasis is on developing networks out of regional efforts; developing a long-term vision, and using a "CONNECT" model to see how the regional network elements might eventually connect to other regional networks. In that regard, FRA will finish the Southeast passenger rail plan by mid-2017 and the Midwest plan by the end of 2017.

Other FRA research efforts Schwartz identified include efforts to develop a robust picture on long-term rail capacity supply and demand aimed at setting priorities and governance strategies for network development.

TRB's Goldstein discussed the National Cooperative Rail Research Program (NCRRP) that was authorized under PRIIA in 2008, and funded at $5 million under the American Reinvestment and Recovery Act of 2010. The program did not receive authorization for new funding in the FAST Act.

With the available funding, the program has published valuable research on passenger rail funding and financing, workforce development, energy consumption compared to other transportation modes, intercity passenger rail in the context of dynamic travel markets, developing multi-state models for planning rail service, resources and strategies for developing intrusion protection systems, Buy America requirements, and intercity passenger rail legal issues. Goldstein characterized these research products as valuable, hands-on tools with practical, everyday applications. He urged attendees to do everything possible to get funding restored for the NCRRP. "You deserve a dynamic research program that contributes as much to your industry as the other TRB cooperative research initiatives do to their respective modes," Goldstein said.

Ann Canby presented One-Rail's latest publication, "Rail Safety in the United States." The paper looks at safety in all modes of transportation and compares their record of safety with the rail industry, which she characterized as being 10 times safer than automobile travel. "If we were investing in safety, the investment would be in rail. If people would take the train rather than drive, there would be many fewer traffic fatalities," Canby said.

Railway Age editor Bill Vantuono said the evolution of the digital age has enabled his publication to reach audiences far beyond the rail industry, but it has also enabled a lot of writers who don't know or understand the industry to put out a lot of misinformation about the industry. "You'd be surprised how much of my day is spent correcting the lack of knowledge in the media and the general public about the rail industry," Vantuono observed.

Marc Willis, a former news reporter and now a public affairs officer at the FRA, urged that rail industry representatives should always "over-communicate" their message to the audiences they are attempting to reach. "The public does not know the language of the industry," Willis said. "There are lots of ways to communicate. Use them all, and if you don't know how to do it or have time to do it effectively, hire someone who does."

Willis suggested that APTA, or other interests should develop a media guide to railroading, and that an aggressive communication strategy needs to be developed and deployed on behalf of the industry. "The general public and members of Congress need education. There needs to be more research on railroading. There needs to be more collaboration between all entities involved in railroading and rail research," Willis observed.

"Technology may be the biggest threat to the rail industry. We need tools to measure risk and uncertainty to ensure smart long-term investment in passenger rail," Willis concluded.

Wrap-Up

Peter Gertler, HNTB, provided a quick concise summary of the day's forum, suggesting that the big take away is collaboration and partnership. "We have passed the tipping point, but we must double our efforts to reach skeptics, to win new champions, and build momentum to bring high-performance passenger rail service throughout America," Gertler concluded.

AUTONOMOUS HIGHWAY VEHICLES

DISRUPTING OR ENABLING HSR TECHNOLOGY?

By: Eric Peterson

Last September the actor Tom Hanks told Parade Magazine, "If I were president, I would make a truly great state-of-the-art national rail service a huge priority because of the infrastructure it would provide. So let's just make really good rail transportation all over our country, so we don't have to go to O'Hare and be at the mercy of rainstorms and backed-up flights. Why can't we take a good train from St. Louis to Denver? And have it really only take like eight hours. Have it like it is in Europe, where it's cheap, efficient and fast. That's what I'd do."

But earlier last fall, the Boston Consulting Group (BCP) published a perspective authored by Joël Hazan, Nikolaus Lang, Peter Ulrich, Jeffrey Chua, Xanthi Doubara, and Thomas Steffens, titled, "Will Autonomous Vehicles Derail Trains?," suggesting that within the next decade or two autonomous vehicle (AV) technology would siphon ridership from all forms of public transportation including high-speed intercity passenger rail, which itself is at least a decade or two from realizing operations in the United States.

Hazan, Lang, et al speculated that based on a survey of travelers in several developed countries, including the United States, "it is suggested that, over time, at least 40% of current train passengers will come to prefer taking an AV over the train….except, we expect that the impact on high-speed trains will be relatively limited because, for the foreseeable future, high-speed trains will continue to be a much faster means of transportation for both medium-distance and long-distance trips than AVs."

This perspective is important for reasons of regional and national economic vitality, and in some ways reflective of a viewpoint offered by one of the most famous railroad lawyers in American history, Abraham Lincoln, who saw the value and necessity of a transcontinental railroad to tie the disparate parts of vast nation together, and an answer to one of the great economic and demographic challenges facing our nation today as large portions of rural America are decamping to urban centers, and economic opportunities in rural areas are dwindling with this migration.

As noted in the U.S. Department of Transportation's recently released report, Beyond Traffic; "Population and economic growth in metropolitan areas is fostering the development of megaregions: networks of urban clusters connected not just by infrastructure but by economic and social relationships."

The report goes on to note that; "Most of our nation's population growth, and an even larger share of job growth, over the next 30 years will take place in these regional clusters of cities. Residents of megaregions share mutual interests and depend on the same critical infrastructure—airports, ports, transit systems, and freight corridors."

In a cautionary note, the report observes, "these regions span counties and states which are often in competition with each other. The growth of megaregions will require greater regional collaboration and integration to ensure regions remain competitive in a global economy."

This collaboration and integration is called in modern terms, "agglomeration."

A recent article in The Economist captured the swift and massive effort the Chinese government has made in building a national high-speed passenger rail network with the intention of promoting agglomeration for economic, social, and political reasons.

Less than a decade ago, the Economist noted, "China had yet to connect any of its cities by bullet trains. Today, China has 12,500 miles of high-speed rail lines, more than the rest of the world combined."

China is planning to nearly double its network by 2025, and with it foster the growth of urban communities throughout the network. Thus far, the network has produced significant benefit for the existing, connected communities. The aspiration is that in building out the network, China will be able to encourage migration from existing urban centers to new communities in the west and central – less densely populated – parts of the country, while ensuring a timely, reliable transportation linkage for travelers throughout the nation.

According to The Economist, the Chinese consider bullet trains to be more than just a mode of transportation. China wants to build a "high-speed rail economy." The idea is to cap the size of mega-cities, and achieve the agglomeration effect with the help of bullet trains. China reasons that the resulting network of large, but not oversized, cities will be easier to manage, plus with increased speed and reliability high-speed trains are expanding the pool of labor and consumers around China's most productive cities while pushing investment and technology to poorer ones.

Back in the United States, the U.S. Department of Transportation (U.S. DOT) is looking at new technologies and their impacts on where and how people live and work, and are seeing a future in which, "Advances in mobile and information technologies are allowing Americans to make different travel choices. The availability of global positioning systems (GPS) has made it easier for individuals and businesses to find the most efficient routes to their destination. Increasingly, the public has access to real-time traffic conditions and public transit schedule information, giving them more power to set and change travel schedules and routes. Innovations in the business world that use these technologies are also changing the way Americans access transportation, and the way they consume goods and services."

The U.S. DOT's Beyond Traffic notes that Amtrak, as America's only nationwide intercity passenger rail service, operates over a network of more than 21,000 route miles serving more than 500 destinations in 46 states, the District of Columbia, and three Canadian provinces.

Popular among young adults and senior citizens, and enhanced by e-ticketing and improved broadband access, Amtrak ridership has increased by more than 50 percent since 1993. More than 30 million passengers traveled on Amtrak in 2015 and it is particularly popular for trips between 100 and 500 miles with well over 85 percent of all passenger trips for journeys less than 250 miles and five percent of trips for journeys more than 400 miles.

While China, much of Europe and other nations are aggressively building high-speed rail networks, the United States is proceeding slowly with an incremental passenger rail improvement program that has distributed approximately $11 billion to 158 rail improvement projects since 2009. Most of these projects have added new tracks, replaced switches and made other enhancements that have done as much to improve America's freight rail service as they have passenger rail service. Notable exceptions to this situation include the California High-speed Rail initiative, where overall the objective is to build "true" high-speed passenger rail service. But even in this situation there are segments where high-speed trains will share track with commuter, slower intercity passenger rail, and freight rail services.

In a 2016 issue brief, the Congressional Research Service observed:

"A challenge facing the future of the HSIPR program is the large amount of funding required for high-speed rail development, combined with the lack of a dedicated funding source and the funding shortages facing other federal transportation programs even with their dedicated funding sources. Another challenge is contending with arguments against intercity passenger rail."

Against this background, the mobility of interest to that of millennials and seniors is shifting as autonomous technologies and shared mobility options emerge as the way of the future. Many see intercity and high-speed passenger rail as the link between the first and last miles of passenger travel that will be served by these new technologies.

The International Association of Public Transport (UITP), in a paper released in early January ("Autonomous vehicles: a potential game changer for urban mobility"), suggests that, "autonomous vehicles are put to use in shared fleets, as 'robo-taxis,' mini-buses or in car-shared fleets, they could dramatically reduce the number of cars on the road by reaching people and places it was too difficult to before – plugging the first/last mile gaps and feeding into public transport trunk lines."

The authors of the UITP study suggest that such a change will produce

significant amounts of induced travel while decreasing both the number of vehicles on the nation's streets and highways, and reducing the amount of land and energy dedicated to personal travel. But in order to achieve this vision, "cities and countries must actively shape the introduction of autonomous vehicles now to prepare the authorization of driverless operation. An integrated effort of all authorities concerned (mobility, road safety, urban planning, traffic control, etc.) must be put in place."

To achieve this objective, the UITP paper suggested a two-step process.

The first step would be to encourage shared mobility by ensuring that autonomous vehicles are shared and that people are ready for this idea of switching between collaborative modes of transport. This can be done by actively promoting all forms of shared mobility including cars, and ride-sharing, and by incentivizing their use through tax incentives, establishing shared vehicle zones, preferred parking areas, and promotional campaigns.

The second step would be to ensure that autonomous vehicles are integrated into "a complete mobility solution with high capacity public transport as a backbone in densely utilized areas to fulfill the lion's share of trips complemented by walking and cycling."

This expression was recently affirmed during the Transportation Research Board's (TRB) 2017 Annual Meeting where several standing committees, including the Intercity Passenger Rail Committee (AR010), held workshops, sessions, and presentations on the integration of emerging technology with intercity and high-speed passenger rail. AR010 hosted a half-day seminar titled "The Virtual Automobile," the presenters included Sampso Heitenan, founder of MaaS Global, and Sharon Feigon of the Shared Mobility Center. They discussed how Mobility as a Service - platforms that provide combined mobility to their customers and ensure the integration of shared AVs into a complete mobility solution in the future including intercity and high-speed passenger rail.

Now witnessing the new Congress and administration in the United States, one can see that despite the obstacles set before the passenger rail renaissance efforts of the past eight years considerable progress has been made in California, in the Northeast Corridor, in the Chicago area, in Texas, in Florida, and in the mid-Atlantic region to create new passenger rail services and to improve existing service. Though constrained by what it considers the realities of cost and space, even the FRA's NEC Futures proposal shows glimmers of optimism over the future and viability of American passenger rail, albeit short of true high-speed rail similar to China, Japan, and Europe.

A list had been circulated recently that purported to be the Trump Administration's list of the Top 50 infrastructure projects. Although the Administration has disavowed any connection with this list, and it has no official standing, it is interesting to note there were five high-speed rail-related projects including the Gateway Project between New Jersey and New York City; the Texas Central Railway Dallas – Houston high-speed train; the D.C. Union Station expansion and rehabilitation; the Howard Street Tunnel in Baltimore; and the Chicago Union Station redevelopment. In addition, there were nearly a dozen commuter rail, subway, and mass transit projects among the Top 50 infrastructure priorities. We will have to take a wait and see posture as to what ultimately is included in the Trump Administration's infrastructure program.

One aspect of this wish list is the fact that most of the U.S. intercity passenger rail system, even large portions of the proposed higher-performing intercity passenger rail initiative, shares track with freight rail service. If AV technology is applied to the rail network as it is anticipated for the highway system, it could have dramatic impact on reducing bottlenecks, improving throughputs, and providing opportunities to reduce conflicts between freight and passenger service.

As always, the question is, and will be, "how will these and other desired projects be paid for?" Perhaps the better question is, "what will it cost if we don't invest in these and other important passenger rail initiatives, especially high-speed rail?

While, as the CRS noted in its earlier cited report, "Critics assert that it requires larger per-passenger subsidies than other travel modes, that it is not well-suited to the economic geography of the United States, and that near-term technologies may provide better alternatives," this is not a matter of choosing one mode of transportation over another. It is about putting in place a mix of transportation options that provide the best possible mobility alternatives to meet the travelers' needs. In that environment, passenger demand grows, needed subsidies decline, more jobs are created, the regional and national economies grow and agglomerate, and stakeholders, including the private sector and government policy makers, become more willing to invest in faster, more frequent, and more reliable mobility in the United States.

Tom Hanks may never become president of the United States, but his aspiration for high-speed rail in the United States should become reality.

CALIFORNIA

FRA REALIGNS HSR GRANT

By: David Cameron

High-Speed Rail Authority: Seeks Billions in Bonds, Issues RFQ for Early Train Operator, Settles Old Lawsuit and Fights New One, Cap and Trade Under Challenge

With 119 miles of active high-speed rail construction in California, it is an exciting time for the California High-Speed Rail project. To keep the project on schedule to complete the Valley to Valley (San Jose to Bakersfield) initial service in 2025, the California High-Speed Rail Authority recently took three groundbreaking votes at its December Board meeting. These votes were:

1.) Approved funding plans for the Central Valley and San Francisco-San Jose segments.

2.) Voted to seek billions of dollars in state bond funds that it needs to continue construction in the San Joaquin Valley and on the San Francisco Peninsula.

3.) Authorized the issuance of a "request for qualifications" from potential train-operating companies to guide the planning and earliest stages of operations for the bullet train system between the San Joaquin and Silicon valleys.

FUNDING PLANS FOR THE RELEASE OF PROPOSITION 1A BONDS

The approval of Proposition 1A in 2008 gave the Authority a $9.9 billion bond to be used to match any proportion of federal funds that have been pledged toward the California High-speed Rail system. So far the federal government has provided roughly $3 billion in American Recovery and Reinvestment Act (ARRA) stimulus funds and other federal railroad money. As the ARRA funds are expiring in September 2017, the Authority has focused on spending the federal money first before any of the Proposition 1A matching bond funds.

However, per the provisions of Proposition 1A, the Authority must provide funding plans for any usable segment of the system before spending the state bond funds. These funding plans include the estimated construction costs, identifies the funding, and provides an assessment of projected ridership and operating revenue. With the approval of the Central Valley Funding Plan, the Authority will be able to begin spending the Proposition 1A bond funds on the construction in the San Joaquin Valley.

The Central Valley Funding Plan that the Authority approved estimated that a total $7.8 billion will be required to build out the first segment of high-speed rail in the San Joaquin Valley. The federal government has provided California with about $2.4 billion in ARRA funds and about $0.6 billion in FY10 federal railroad transportation money. About $2.6 billion is expected to come from Proposition 1A, and another $2.2 billion from the state's Greenhouse Gas Reduction Fund. While there will be no revenue service until the Valley to Valley line is complete, the initial segment in the Central Valley can be used as a "test track" to conduct trials of high-speed trains above 200 mph.

The funding plan for the San Francisco to San Jose Section was required for the release of Proposition 1A money to help fund the Peninsula Corridor Electrification Project (PCEP), which will electrify the Caltrain Corridor and provide the necessary foundational improvements for high-speed rail service to San Francisco as part of the "blended system". With the approval of the funding plan, the Authority will provide about $730 million in Proposition 1A money for the electrification project. The overall PCEP cost is estimated to be about $2 billion, with an additional $647 million planned from the federal government. However, the federal grant now appears to be in doubt.

CALTRAIN PENINSULA CORRIDOR ELECTRIFICATION PROJECT

California's 14 member Republican Congressional delegation wrote to DOT Secretary Elaine Chao asking that neither the $647 million grant or any further monies be provided for California's high-speed rail system. While not denying the grant, on February 17, Secretary Chao put it on hold until a full federal review of the electrification project could be completed. Secretary Chao wrote to Caltrain that the grant would be considered with President Trump's upcoming 2017-2018 fiscal budget. Of course, there is not a guarantee that the Caltrain money will be put in the president's overall budget, even if the grant was approved.

The timing of the delay in approving

the grant could not have been worse for Caltrain, which has a March 1st, 2017 deadline to issue full notice to proceeds to contractors Balfour Beatty and Stadler Rail. Currently, both contractors have been preparing for the start of construction under a limited notice to proceed, which was issued last fall. After March 1st, Caltrain must restart the bidding process for the project, resulting in costly delays to construction.

Electrifying and modernizing Caltrain will create 9,600 jobs: from power converters and transformers built in Richmond, Va.; the electric train shells built in Humble, Texas; the construction of the facility and manufacture of the railcars that will employ over 500 people in Salt Lake City; or engineering services in San Mateo. To date, Caltrain has already spent about $150 million on the electrification project. However, Secretary Chao's decision to delay federal funds will have potentially devastating effects on Caltrain's electrification project.

LAWSUITS

The funding plans for the Central Valley and the Bay Area already have attracted litigation to stop the use of Proposition 1A money. Previous high-speed rail opponents, Kings County, filed a new lawsuit challenging the validity of Assembly Bill 1889, which established parameters for what constitutes a high-speed rail segment that is "suitable and ready for high-speed train operation" and set the stage for the Authority to present the two above mentioned funding plans. Kings County believes the AB 1889 changes the original language and meaning of Proposition 1A, while the Authority believes the law clarifies some aspects of the bond act and its funding plans meet the requirements of the law.

The Authority also recently reached a settlement with Kern County that will dismiss the county's litigation over the project's final environmental impact report for the Fresno-to-Bakersfield section. In 2014, the county sued the agency arguing that the environmental assessment wasn't sufficient and violated the California Environmental Quality Act.

The agreement "demonstrates the commitment between both parties to work together to bring high-speed rail service to the region along with small business opportunities and jobs for Central Valley residents," the Authority said in a press release.

SEEKING OPERATORS

The Authority also released a Request for Qualifications for early train operator services to assist with the planning, design and management of the high-speed rail system. The Authority hopes that by bringing in a private operator now, they can provide strategies to improving the attractiveness of the overall service while reducing operating and maintenance costs. Partnering with a private sector operator is key to ensuring the success of the high-speed rail system.

The Request for Qualifications will be followed up with a Request for Proposals to be released to qualified offerors in spring 2017. The first phase of the contract will be a performance-based contract with a not-to-exceed amount of $30 million dollars. The Authority hopes to have an early train operator on board this summer.

CAP-AND-TRADE

A primary source of funding for the high-speed rail project, about $500 million a year, comes from California's carbon cap-and-trade program. California's "cap-and-trade" program is a central piece of a wide-ranging series of regulations meant to reduce the emissions of heat-trapping gases. The state places a limit on emissions and reduces the cap limit over time. Permits to pollute are auctioned quarterly to affected companies who exceed the emissions cap or to investors, who can hold onto them for future sale to polluting companies.

However, the California Chamber of Commerce and other businesses looking to invalidate California's fee for carbon pollution have filed an appeal with a state appeals court in a case that could determine the future of the program. The uncertainty surrounding the case has already affected the market for pollution permits, which consistently raised hundreds of millions of dollars a year until demand plummeted in 2016.

Good news for the state is that legal precedence is on their side. Sacramento County Superior Court Judge Timothy Frawley upheld the Cap-and-Trade program in a 2013 ruling. Judges from the 3rd District Court of Appeal have until late April to issue a decision. It is likely that lawyers on both sides will appeal to the California Supreme Court if they lose.

High-Speed Rail Construction Update

Meanwhile, construction on the first 119-mile segment continues in the Central Valley, where work is currently concentrated at nine major sites. Major construction projects include the building of viaducts to carry high-speed trains over the Fresno River, San Joaquin River, existing freight railroads, and State Route 99 in the Fresno and Madera areas. Other major activities include the building of a trench for high-speed trains to pass underneath State Route 180 and the 2-mile realignment of State Route 99 approximately 100 feet to the west to make room for high-speed trains entering Fresno.

More information about ongoing and upcoming construction projects can be found at: http://www.hsr.ca.gov/build-hsr.html

STATE PROJECTS ROUND-UP

Contribution By: Kenneth Sislak, Justin Fox, Stephen Gazillio and Peter Voorhees

Passenger rail service continues to grow in popularity across the United States. The numbers tell the story. More and more people are riding passenger trains. Amtrak broke another ridership record in FY2016 by carrying 31.3 million passengers. This was nearly 400,000 more than the previous year. This is the sixth consecutive year Amtrak has carried more than 30 million passengers. Amtrak ridership has grown 50 percent since 2000. Amtrak now covers 94 percent of its operating costs through ticket sales and other revenues. Several Amtrak services also had record years in both ridership and revenue including:

- Northeast Corridor regional services,
- Pacific Surfliner (San Diego – Los Angeles),
- Capitol Corridor (San Francisco Bay – Sacramento),
- Keystone (Harrisburg – Philadelphia),
- Hiawatha (Chicago - Milwaukee),
- California Zephyr (Chicago-Denver-San Francisco Bay) long-distance train.

This increase in ridership and revenue is the result of strategic investments in infrastructure and service improvements including increased frequency, reliability and on-time performance.

As an advocacy organization, APTA must keep Surface Transportation Board (STB) members, state legislators and congressional representatives informed of the need for improved rail passenger service. What follows are brief discussions of the how states and local communities are getting involved in planning and implementing the investments needed to restore and improve intercity passenger rail services from around the country.

INTERSTATE REGIONAL PLANNING

The Federal Railroad Administration (FRA) has taken the lead on organizing and coordinating multi-state planning efforts. As noted last year, it started with the Southwest Multi-State Rail Planning Study and included the Northeast Corridor Future initiative. This was part of its national planning effort to develop a toolkit for the conceptual planning of integrated passenger rail networks at the multi-state and megaregional level and to advance improvements to the Northeast Corridor. A part of the planning toolkit included the development of a CONceptual NEtwork Connections Tool (CONNECT) that helps analyze the performance of passenger rail corridors and networks. In 2016, FRA engaged CDM Smith and Steer- Davies Gleave to improve the CONNECT tool. That work is nearing completion and will be used in other multi-state planning studies.

In 2016, FRA initiated the Southeast and Midwest multi-state regional planning studies. The plans will unite state rail planning in these regions, foster multi-state coordination and provide a framework for governance and operation of interstate and inter-regional passenger service planning. The studies will examine existing conditions and assess baseline and future market opportunities. A Generalized Network Vision that describes the communities to be served by rail and the corridors that link them will be prepared along with a Service Plan to describe the range of train services (frequencies, speeds, capacity) connecting the markets in the network and how those services would operate and interact in the network. FRA selected CH2M for the Southeast and Quetica, LLC (with WSP Parsons Brinckerhoff) for the

Amtrak Acela at New Haven.
(Photo courtesy of Bill Lipfert)

Denver A-Train ribbon cutting.
(Photo courtesy of RTD)

Midwest studies. Stakeholder involvement and outreach is a key element of both studies.

GULF COAST PASSENGER RAIL RESTORATION

More progress has been made on restoring passenger rail service to the Gulf Coast, which was lost after Hurricane Katrina. The Southern Rail Commission (SRC) has coordinated with Amtrak to study restored passenger service along the Gulf Coast from Louisiana to Florida. The SRC is part of the Gulf Coast Working Group (GCWG), which was established by the FAST Act to outline a path that restores passenger rail service along the Gulf Coast. Support to achieve this goal has continued to grow deeper and stronger since last year's SPEEDLINES update.

During a meeting in December 2016 at Bay St. Louis, MS, the SRC announced allocations for more than $2 million in funding through an FRA grant to 11 communities in Alabama, Mississippi and Louisiana. The funding is to be used for station area planning and construction projects that will ensure safe access and better connectivity to and from the station, improve convenience for riders, update facilities, and leverage economic opportunity that comes with station redevelopment.

Also in December the GCWG outlined its preferred service option: A daily, overnight long-distance train operating each way between New Orleans and Orlando that would operate as an extension of the Chicago – New Orleans City of New Orleans train, with through equipment from Chicago to Orlando; plus a daily, state-supported train operating round trip between New Orleans and Atmore, AL east of Mobile.

Northeast Corridor (NEC FUTURE)

The FRA has prepared a Tier 1 Final Environmental Impact Statement (Tier 1 Final EIS) in compliance with the National Environmental Policy Act (NEPA) and other applicable laws and regulations. The Tier 1 Final EIS describes the Preferred Alternative identified for NEC FUTURE and evaluates its service characteristics and effects on the built and natural environment. It also provides responses to the comments received on the Tier 1 Draft EIS during the public comment period, and provides corrections to the Tier 1 Draft EIS in response to comments received. The Final Tier 1 EIS was released in December 2016 with a final waiting period ending in January 2017. A joint venture of AECOM and WSP Parsons Brinkerhoff assisted the FRA in preparing the document. The Preferred Alternative provides the capacity to dramatically increase the number of trains and improve the railroad's performance. The Preferred Alternative focuses investment on the existing NEC, improving reliability by bringing it to a state of good repair and eliminating chokepoints that cause delays. It adds new track to grow the NEC to four tracks at most locations. Trains would operate frequently with improved connections,

greatly enhancing travel options. For more information on the NEC FUTURE, please turn to page 36 in this edition of SPEEDLINES. The Final Tier 1 EIS can be found at: http://www.necfuture.com/tier1_eis/feis/

STATE UPDATES

Alabama – The Alabama Department of Economic and Community Affairs (ADECA) completed a feasibility study to determine the feasibility of restoring passenger rail service between Birmingham and Montgomery in December 2013. The study was prepared by HDR. ADECA is now looking to study the feasibility of the Montgomery – Mobile segment of the Birmingham – Montgomery – Mobile route. A consultant team will be selected later this year to assist ADECA is completing this study.

Arizona – The Arizona Passenger Rail Study: Tucson to Phoenix began in 2011. On December 19, 2016, the Tier 1 Final Environmental Impact Statement (EIS) was completed by the Arizona Department of Transportation (ADOT), in coordination with the FRA. Furthermore, the FRA signed the Record of Decision (ROD) selecting the Yellow Corridor Alternative with routing options that would be further reviewed during Tier 2 project level studies for passenger rail service between Tucson and Phoenix. To this point, no construction schedule for the project has been determined, and no funding plan has been put in place. ADOT and FRA were assisted by a consulting team that included AECOM, HDR, Jacobs and WSP Parsons Brinkerhoff. Amtrak's Chicago-Los Angeles Southwest Chief and Los Angeles-New Orleans Sunset Limited continue to serve the state along with connecting Thruway buses.

Arkansas – The Arkansas State Highway and Transportation Department (AHTD) is studying the feasibility of new passenger rail service between Little Rock and Memphis, which is part of FRA's designated South Central High-Speed Rail Corridor (SCHSRC) across the state. AECOM is preparing the study with Cambridge Systematics. Most of the corridor follows the existing Texas Eagle route. The initial phase is exploring the feasibility of extending the SCHSRC designation from Little Rock to Memphis, which would invite passenger rail investments linking these cities with Dallas and potentially San Antonio. Once a feasible alignment is identified between Little Rock and Memphis, the SDP will be prepared later in 2017 for the full service corridor. Currently, the FRA and AHTD are reviewing the alternatives analysis.

California – Caltrans is completing its 2018 State Rail Plan, emphasizing network integration as part of its Vision 2040. Under the 2040 Vision, high-speed rail will become a trunk system uniting the northern, central and southern parts of the state, and riders will rely increasingly on intercity and regional commuter trains and urban transit services to access the high-speed rail system. The California High-Speed Rail Authority is currently constructing the first operating segment of its planned high-speed rail system between Merced and Fresno in the Central Valley. The construction includes two major projects in Fresno: a trench taking trains 40-feet below ground under a rail spur, a canal and State Route 180, and a half-mile-long, 80-foot-tall elevated viaduct south of downtown.

The three California state-supported corridor services – the Capitol Corridor, the San Joaquins, and the Pacific Surfliners – continue under regional managements, which are planning improvements to enhance services and attract new riders. For example, capital projects planned or in progress on the 351-mile Pacific Surfliner route between San Luis Obispo, Los Angeles and San Diego total $5.4 billion. The San Joaquin service initiated a seventh round trip in 2016. On the Capitol Corridor route in the next 10 years, planned improvements include more service between Oakland and San Jose, as well as service expansions to Roseville, Auburn and Salinas.

Amtrak long distance trains the Chicago-Los Angeles Southwest Chief, Chicago-Oakland California Zephyr, Los Angeles-Seattle Coast Starlight, and Los Angeles-New Orleans Sunset Limited continue to serve the state, along with multiple connecting Thruway bus routes.

Colorado - In 2016, Amtrak restarted a Colorado tradition – the Ski Train, aka the Winter Park Express, between Denver and Winter Park. The train ceased operations is 2009. The train provides skiers a daily round trip and overnight options. With the train, skiers can avoid an occasionally treacherous drive on an often congested I-70 corridor. More than 3,300 tickets were sold the first day sales opened for the ski season in September. Amtrak's Chicago-Emeryville California Zephyr and the Chicago-Los Angeles Southwest Chief continue to serve the state, along with connecting Thruway buses. Projects to improve the speed and reliability of the Southwest Chief's route through Colorado, Kansas and New Mexico continued in 2016. The improvements were funded by a $46 million federal TIGER grant, Amtrak, BNSF and matching state and local support.

The 23-mile electrified University of Colorado A Line connecting Denver International Airport to downtown Denver and several communities along I-70 opened for revenue service on April 22, 2016 as scheduled. The integrated passenger rail line has connections at the renovated and expanded Denver

Amtrak Capitol Corridor
(Photo courtesy of Caltrans)

Amtrak Hoosier State
(Photo courtesy of InDOT)

Union Station to Amtrak and the C, E and W light rail lines, the B Line commuter rail service to Westminster and local and regional buses. Unfortunately, the new service has been plagued by start-up issues including signal timing problems at roadway crossings. RTD and its contractor, Denver Transit Partners, continue to coordinate with the FRA to resolve crossing timing issues along the University of Colorado A Line. The FRA has extended the operational waiver through April 30, 2017 to provide additional time to resolve the technical issues.

Connecticut - Work continues for the 2018 completion of the state's $693 million New Haven, Hartford, and Springfield rail project – now called the CTrail Hartford Line (Hartford Line). Double tracking and station upgrades are underway between New Haven and Hartford, and design work has begun to extend the double tracking through to Springfield. In 2018, the new Hartford Line service will consist of both expanded Amtrak service and new regional trains operated by the Connecticut Department of Transportation, with 17 roundtrip trains operating between New Haven and Hartford, and 12 extended to Springfield. With completion of the work to Springfield, service is planned to be expanded to some 25 daily trains in each direction by 2030. The CTrail Hartford Line will connect with existing Metro-North commuter rail and Amtrak Acela high-speed rail services on the New Haven Line to New York and on the Northeast Corridor to New London and Boston. Once the entire line is upgraded from New Haven to Springfield, there will be 25 round trips a day, with ridership increasing to over 1 million riders a year according to Connecticut DOT.

Florida – All Aboard Florida's "Brightline" branded project is nearing completion and has begun testing its new trains getting ready for a scheduled service launch later this year. The first of five trainsets (named BrightBlue) began dynamic testing on January 19 on a nine-mile stretch of track between Park Place in West Palm Beach and Central Boulevard in Lantana. The initial Phase I of the new passenger rail service is located along the 66.5 miles of the Florida East Coast Railway (FEC) corridor connecting West Palm Beach, Fort Lauderdale and Miami, and includes three stations and associated infrastructure improvements. Stations in Miami, Fort Lauderdale and West Palm Beach are in various phases of construction. The stations in Fort Lauderdale and West Palm Beach have been topped off and interior outfitting work is well underway. MiamiCentral has been under construction since the beginning of 2015 and the iconic V shaped supports are being erected. All three of Brightline's South Florida stations have been designed by Skidmore, Owings & Merrill LLP (SOM) in association with Zyscovich Architects, an integrated urban design, architecture, and interior design firm headquartered in downtown Miami. AECOM is providing full track design services to install approximately 130 miles of mainline track along the north-south corridor from Indian River/St. Lucie County Line (MP 233.4) to Miami (MP 365.1). The addition of the double track along this portion of the corridor requires roadway modifications at 260 existing grade crossings, signal work, and structural/bridge improvements. Grade crossing appliances have been relocated and/or replaced

to accommodate the new passenger track. These modifications require completion of the Grade Crossing Assessment Review process in coordination with All Aboard Florida, the Florida Department of Transportation (FDOT), and other stakeholders to confirm planned work appropriately addresses all requirements and is integrated into an approved traffic control plan. Be sure to checkout the Brightline feature story on Page 29 of this issue.

Georgia – The Georgia Department of Transportation (GDOT) is studying two passenger rail corridors. The FRA, GDOT, and the Tennessee Department of Transportation (TDOT) prepared a Tier I Environmental Impact Statement (EIS) to evaluate the general corridor-level environmental and related impacts of constructing and operating proposed high-speed ground transportation (HSGT) service within an approximately 140-mile corridor between Atlanta and Chattanooga. The FRA released the Tier 1 Draft EIS on October 7, 2016 after nearly six years of technical analysis and collaboration with various federal, state, and local agencies and the public. The Tier 1 EIS public and agency review and comment period closed on December 31, 2016. Currently, AECOM is actively working on a combined Final EIS/Record of Decision (ROD). It is expected FRA will issue the ROD on the Tier 1 EIS by early summer 2017.

In addition, GDOT is preparing the Atlanta to Charlotte Passenger Rail Corridor Investment Plan (PRCIP). This is an extension of the Southeast High-Speed Rail Corridor (SEHSR), which is under development from Charlotte to Washington, D.C. The extension from Charlotte, would travel southeast through portions of South Carolina and into Atlanta. Currently, a Tier 1 Draft EIS is being prepared by HNTB for FRA and GDOT. The Tier 1 Draft EIS is scheduled to be released for public review in early 2017 with a Final EIS/ROD scheduled for later this year or early 2018.

The Columbus Consolidated Government (CCG) completed its Columbus to Atlanta High-Speed Rail Feasibility Study in February 2014. The $350,000 study began in March 2013 and was prepared by HNTB Corporation under an on-call contract with GDOT. This study explored the relative feasibility of high-speed passenger rail between Columbus and Atlanta based on revenues, operating ratios, financial performance and social impacts. Over the 10-month study period, two representative routes and three high-speed rail technologies were identified and examined. Utilizing socioeconomic and transportation data, stakeholder input, and forecasting and planning tools, the study team developed operating plans, ridership forecasts, operations and maintenance cost estimates, and capital cost estimates for each alternative. The study concluded the new passenger rail service may be feasible, but an environmental assessment would be needed before plans could move forward. HNTB presented Columbus Council with an update on the project during a council meeting in December 2016, where local and state supporters were present. It was reported FRA assured study sponsors that funding would be available for the environmental assessment. It was also reported there could be opportunities for private-public partnerships. Moving forward, the CCG will begin working on both immediate and long-term next steps for successful implementation. These include incorporating the study into the Georgia State Rail Plan, preparing for the next planning and environmental assessments, and identifying funding/financing strategies for implementation.

Idaho - The Pioneer Restoration Organization continues to advocate for a restoration of the former Amtrak Pioneer serving Denver, Boise and Seattle. The train ceased operations in 1997. Amtrak's Empire Builder continues to serve the state, along with Thruway buses to Salt Lake City and the Pacific Northwest.

Illinois – The Illinois High-Speed Rail Project between Chicago and St. Louis is nearing completion. The $2 billion project is enabling higher-speed operations of up to 110 MPH between Joliet and East St. Louis. The final project element, the Springfield Rail Improvements Project, will establish a quiet zone through the city and provide safety and local access enhancements. The City has contracted with Hanson Professional Services Inc. for these improvements valued at $25 million. Independent station improvements continue in the corridor. One example, the new Alton Regional MultiModal Transportation Center, is scheduled for completion in the first half of 2017.

In January, the City of Chicago and the US Department of Transportation (USDOT) Build America Bureau entered an Emerging Projects Agreement (EmPA) regarding Chicago Union Station. The goal of the agreement is to identify $1 billion to modernize Chicago's main rail hub and redevelop the surrounding area. Last July, Arup was awarded a $6 million contract for station design and engineering.

Quandel Consultants was selected by IDOT as Program Manager to advance a proposed passenger rail service between Chicago and Moline / Quad Cities. Preliminary Engineering was completed in 2016 with support from AECOM.

The Midwest High-Speed Rail Association continues to advocate for regional rail improvements and a framework for next-generation high-speed rail in the Midwest. Its signature concept is the CrossRail program of interrelated projects in Chicago, from the O'Hare International Airport (ORD) vicinity to the Southeast Loop. In February, Mayor Rahm Emanuel again stated his support for a similar project: an express rail connection between O'Hare and the Loop. Related concepts developed by WSP | Parsons Brinckerhoff under its 2016 contract have not yet been released.

Indiana – Ms. Venetta Keefe was recently promoted to Rail Program Manager for Indiana DOT (InDOT) replacing Mike Riley who retired after many years of faithful service. The July 2015 issue of SPEEDLINES contained an article written by Ms. Keefe discussing their innovative public/private partnership involving Iowa Pacific managing the Hoosier State service on the 196-mile corridor between Indianapolis and Chicago. The Hoosier State runs four days per week with stops in Crawfordsville, Lafayette, Rensselaer and Dyer. Amtrak's long-distance Cardinal train makes those stops the other three days per week. The Iowa Pacific Railway had furnished rolling stock and on-board service personnel. The train was operated by Amtrak and the service was subsidized by Indiana. Iowa Pacific has operated the Hoosier State since July 2015. However, just recently InDOT and Iowa Pacific mutually agreed to terminate the Hoosier State service contract early. The agreement with Iowa Pacific would only remain in effect through February 2017. Amtrak will take over operation of the Hoosier State on March 1, 2017. Iowa Pacific increased ridership on the line by introducing a host of amenities, including an on-board chef, Wi-Fi and dome-car seating. This will be replaced by Amtrak equipment and train attendant crews. Amtrak has indicated a willingness to continue Wi-Fi services and provide Business Class service.

Five years ago the City of Fort Wayne and the Northeast Indiana Rail Passenger Association (NIPRA) sponsored a feasibility study for new passenger rail service between Chicago - Fort Wayne - Columbus. The study conducted by TEMS concluded that the new passenger rail service would have a positive financial and economic impact and represented a sound investment. Since that study concluded in December 2012, the City of Fort Wayne and other stakeholders launched a funding raising campaign to pay for a Passenger Rail Corridor Investment Plan (PRCIP) including a Tier I environmental assessment and Service Development Plan. It was estimated the cost of the PRCIP would be in excess of $3 million. The City of Fort Wayne and other stakeholders, including Lima, Ohio raised approximately $500,000 toward the $3 million goal. FRA approved the City and other stakeholders to initiate a public outreach and alternatives analysis study to advance the PRCIP. NIPRA selected HNTB to manage public and stakeholder outreach and prepare the alternatives analysis. This element of the study effort is expected to be completed by September 2017. The project sponsors and stakeholders are anticipating raising additional state and federal funding to pay for the balance of the PRCIP. The Midwest Ohio Regional Planning Commission (MORPC) in Columbus has expressed interest in raising the necessary funds to extend the study area from Lima to Columbus, Ohio. Several other Ohio communities have agreed to fund some initial data collection for their portion of the study. Up to now, local community leaders in Columbus have expressed skepticism about passenger rail service and were instead expressing interest in examining Hyperloop options.

Iowa – A Final Environmental Impact Statement (EIS) was signed for the Chicago to Council Bluffs-Omaha Regional Passenger Rail System Planning Study by the FRA on May 24, 2013. FRA executed a Record of Decision (ROD) on August 2, 2013. HDR and HNTB prepared the environmental documentation for FRA and Iowa DOT. No action has been taken to advance this project since then.

Another feasibility study of passenger rail service between Iowa City and North Liberty was undertaken in 2016. The study is being spearheaded by the Iowa DOT and Cedar Rapids and Iowa City Railway (CRANDIC). Other stakeholders included Johnson County, Iowa City, Coralville and the University of Iowa all provided funding. This is Phase 2 of on-going research over passenger rail service in Eastern Iowa. Phase 1 estimated the cost for establishing Cedar Rapids to Iowa City service at between $250 million and $500 million, with annual operating costs of approximately $5.6 to $6.7 million. Earlier studies were done in 1994 and 2006 by Wilbur Smith Associates and R.L. Banks & Associates.

Louisiana - The Southern Rail Commission released a Governor's briefing book on passenger rail opportunities between Louisiana's two largest cities: New Orleans and Baton Rouge (September 2015). The recommended proposed passenger rail service start-up suggested operating two round trip trains a day with the goal of increasing trips, speed and ridership incrementally. The rail passenger service would connect an 80-mile corridor, representing more than 2.2 million people and nearly 1 million Louisiana jobs. The line is projected to serve 210,000 riders per

year and would require both capital and operating funding support. This study was completed by Transportation for America and the Center for Planning Excellence. While no funding has been identified for operations, corridor planning continues to be active. Baton Rouge, Gonzales and LaPlace will split $375,000 from an FRA grant to start station area planning for the Baton Rouge – New Orleans service. Local governments have put up additional money for station design and development.

Maine – The Downeaster rail service celebrated its fifteenth year of service on December 15, 2017. The 145-mile regional passenger train service is managed by the Northern New England Passenger Rail Authority (NNEPRA), which was created by the State of Maine. The service is operated by Amtrak. Named for the Down East region of Maine, the train runs from North Station in Boston, Massachusetts to Brunswick, Maine, with 10 intermediate stops. The train operates five daily round trips between Portland and Boston, two of which continue to Brunswick. Since its inception, more than 46,000 Downeaster trains have operated, transporting more than six million passengers an equivalent of nearly 500 million passenger miles. A $13 million 60,000 square-foot layover facility in Brunswick opened in October 2016, allowing the overnight servicing of Downeaster passenger trains. A study of a proposed Downeaster extension to Lewiston – Auburn is expected to be launched in 2017.

Maryland – Amtrak selected three teams to compete to lead the redevelopment of Baltimore's Penn Station and other nearby properties owned by it. Amtrak plans to choose a master developer in summer 2017 to create a master plan and lead design, construction and management of the properties and non-rail parts of the station. The finalists for the high-profile redevelopment site include several well-known Baltimore firms, one of the country's largest minority-owned real estate firms, and a company the railroad has been working with on the redevelopment around Philadelphia's 30th Street Station. The finalists are:

• Penn Station Partners, which is led by Baltimore's Beatty Development Group, the developer of Harbor Point. The team also includes Armada Hoffler Properties, a frequent Beatty partner, and Bill Struever's Cross Street Partners. Amtrak previously tapped Beatty in 2013 to create a master plan for the station.

• Peebles-AZ Baltimore Penn, which is led by the Peebles Corp., a private company based in Florida that is one of the nation's largest minority owned development, with projects that include a major transit-oriented project in Boston and a Washington office building that includes Amtrak offices. It is working with Baltimore's AZ Group, New York investment management firm MacFarlane Partners and Baltimore's Williams Jackson Ewing and Marks, Thomas Architects.

• Brandywine Realty Trust, a real estate investment trust headquartered in Pennsylvania, which has been working on the station master plan in Philadelphia. The team led by the firm includes Baltimore architecture firm Ayers Saint Gross, Baltimore's Pinkard Properties, Bethesda's Clark Construction and Madison Marquette.

Massachusetts – The Northern New England Intercity Rail Initiative's environmental assessment study was submitted in mid-2016 and received a Finding of No Significant Impact (FONSI) from the FRA. MassDOT and the Vermont Agency of Transportation, in collaboration with the Connecticut DOT, conducted the alternatives analysis and feasibility study to examine the opportunities and impacts of more frequent and higher speed intercity passenger rail service on two major rail corridors known as the Inland Route and the Boston to Montreal Route. HDR, AECOM and Fitzgerald Halliday assisted MassDOT in preparing the environmental assessment.

MassDOT is now conducting a statewide rail plan, which is expected to be complete in the Fall of 2017. The state rail plan is being developed to help guide the future of rail system investments as well as freight, commuter and passenger rail services across the state. The plan outlines the Commonwealth's 20-year vision and four year plan for the statewide rail system, describes the policies and planning goals for the state rail network, the existing rail system, future trends, proposed improvements, and the state investment program. HDR is preparing the State Rail Plan with assistance from AECOM.

Michigan – MDOT continues to advance the capital improvements program along the state-supported Amtrak Wolverine service between Pontiac, Detroit and Chicago with program management assistance from Quandel Consultants. These improvements, totaling $254.5 million, expand the territory in Michigan where trains can operate at up to 110 miles per hour. A major milestone will come to the corridor in 2017: the completion of the ARRA-funded track and signal improvements between Dearborn and Kalamazoo. A Tier 1 Draft EIS for further improvements in the corridor was released for public review in 2014. The Tier 1 Draft EIS was led by the State of Michigan with assistance from HNTB. FRA is now leading the study. There is no advertised date for a Record of Decision and completion of a more detailed Tier II analysis of

the corridor.. MDOT is also negotiating with host railroads between Dearborn and Pontiac for service expansion to Detroit and points north. Amtrak dispatching along the entire MDOT ownership portion (between Kalamazoo and Dearborn) is anticipated within the calendar year. But, the majority of improvements needed to increase service from 3 to 10 daily round trips are required in Indiana near the gateway to Chicago.

Minnesota – The Northern Lights Express (NLX), described last year, is a proposed passenger rail project along BNSF trackage between Minneapolis and Duluth. The project is envisioned as operating at a top speed of 90 MPH. The FRA and Minnesota DOT (MnDOT) in cooperation with the Minneapolis-Duluth/Superior Passenger Rail Alliance and Wisconsin Department of Transportation, expects to release a Tier 2 Project Level Environmental Assessment (EA) for the project this spring. The Tier 2 EA, developed with assistance from HNTB, addresses specific elements outside the scope of the 2013 Tier 1 EA. The anticipated cost to implement the NLX project is estimated to be approximately $500 - 600 million. If fully funded, Final Design and Construction can be completed within two years.

Work on the proposed 100-mile Rochester - Twin Cities Rail Corridor (Zip Rail) was suspended in January 2016. WSP Parsons Brinckerhoff prepared the scoping report before work was suspended by MnDOT.

Mississippi – Mississippi is a member-state of the Southern Rail Commission, which has envisioned a high speed rail service operating along the Gulf Coast. The Gulf Coast Corridor runs from Houston to Atlanta. Another segment of the Corridor travels east from New Orleans through Biloxi and finally Mobile. Mississippi as part of the SRC and GCWG has begun the planning necessary to restore the Gulf Coast service between New Orleans and Jacksonville, which was suspended after Hurricane Katrina. This is the service that would also stop in Biloxi and Mobile and would continue to Orlando as the preferred alternative. The service originates in Chicago as part of the City of New Orleans with thruway service to Orlando.

Mississippi also has explored four other potential new passenger rail services plus several suggested thruway motor coach services as part of its state rail planning process. If implemented, potentially there could be seven distinct rail services in Mississippi including the two existing Amtrak services. Two of the five new services – New Orleans-Meridian-Birmingham-Atlanta and New Orleans-Jackson-Memphis – would be on existing Amtrak routes, where they would provide multiple frequencies daily at Mississippi stations. Two more – Meridian-Jackson-Shreveport-Fort Worth and Jackson-Hattiesburg-Gulfport/Biloxi – would be on totally new routes, providing rail service in parts of Mississippi that have not seen a passenger train in decades. The fifth service is the aforementioned restoration of Gulf Coast service.

The line between New Orleans and Atlanta via Meridian and Hattiesburg would use the current Amtrak Crescent route. As noted, a feasibility study was completed in 2006. This passenger rail project is still in the State Rail Plan despite not identifying how this project will be paid for. The Amtrak inspection trip generated great excitement and enthusiastic support for the restoration of passenger rail service between New Orleans and Atlanta.

Missouri - Amtrak service is provided in Missouri on two long distance routes – the Southwest Chief and Texas Eagle - and two state-supported routes - the Missouri River Runner and Lincoln Service. The state provides about $8 million annually to operate the Missouri River Runner. Missouri received more than $53 million in federal grants for improvements on the route segment between St. Louis and Kansas City. Amtrak ridership in Missouri has grown 46 percent in the last five years. Recommendations to improve Missouri's passenger rail service further are part of a greater plan to improve travel within the Midwest region and are outlined in the State Rail Plan prepared by HNTB. Missouri is participating in the Midwest NextGen equipment procurement for new locomotives and passenger rail equipment assigned to the Missouri River Runner service.

Nevada – Xpress West and the Los Angeles commuter rail service provider Metrolink have executed a Memorandum of Understanding to coordinate with each other on the development of phased high-speed rail service between Anaheim and Las Vegas. Amtrak's Chicago-Emeryville California Zephyr continues to serve the state, along with connecting Thruway buses.

New Hampshire – The New Hampshire legislature voted on March 10, 2016 to reject the Department of Transportation's (NHDOT) $4 million proposed planning effort to proceed with permitting and preliminary engineering to establish new passenger rail service between Boston and Concord, NH, with a potential extension to Montreal. A state Senate vote two months later upheld the House vote, despite polls showing more than 70 percent of residents supporting the rail. The rail plan was part of the Capitol Corridor study, which evaluated a diverse set of rail and bus options for improving connectivity in the corridor by leveraging existing transportation infrastructure and integrating transportation and land use planning. The study

found the need for passenger rail service has been growing for decades along the 73-mile corridor. The critical project development phase was the next logical step in the NH Capitol Corridor rail plan. It consisted of developing a detailed financial plan, engineering, and preparation of funding applications for submission to the Federal Transit Administration (FTA) and FRA. Governor Christopher Sununu, elected in November 2016, ran on a platform that did not consider the rail project a priority. "When we have real infrastructure priorities and needs that can help the 700,000 people a day that drive on those roads, why should we be spending $300 million for a train so maybe we can send a couple thousand people to work in Boston?" Sununu said in an interview with the Concord Monitor editorial board last fall.

New York – New York's plans to strengthen its rail passenger system by providing higher speed passenger rail within the Empire Corridor between Buffalo and New York City are moving forward, albeit more slowly than originally planned. Completion of the $4 million New York State DOT study of options for faster passenger trains across Upstate New York has been extended to September 30, 2017 – public comments on the final environmental impact statement ended April 30, 2014. The final report is expected to select one alternative from the five they received comments on. These include:

• Alternative 90A: New locomotives and passenger cars, station and track improvements, and raised top speeds to 90 mph. Cost estimate: $1.66 billion.

• Alternative 90B: More than 300 miles of track dedicated to passenger trains, plus all Alternative 90A improvements. Cost: $5.58 billion.

• Alternative 110: All 90A improvements plus 325 miles of new dedicated passenger track and a top speed of 110 mph. Cost: $6.25 billion.

• Alternative 125: New, separate 247-mile rail corridor, including sections of elevated track, with limited stops where passengers would transfer to local trains. Top speeds, 125 mph. Cost: $14.71 billion.

• A sixth alternative is a No Build option.

The alternatives were developed to offer ways to improve on-time performance and reliability resulting from investments in this 463-mile rail corridor between New York City and Buffalo/Niagara Falls.

The Gateway Program is a proposed set of strategic rail infrastructure improvements designed to improve current services and create new capacity that will allow the doubling of passenger trains running under the Hudson River. The program will increase track, tunnel, bridge, and station capacity, eventually creating four mainline tracks between Newark, NJ, and Penn Station, New York, including a new, two-track Hudson River tunnel. Initial findings on the economic benefits of investment in the Gateway Program were presented December 12, 2016 by Amtrak's Executive Vice President, Stephen Gardner. AECOM and WSP Parsons Brinckerhoff assisted Amtrak in preparing the Benefit- Cost Analysis (BCA). The analysis showed a B/C ratio ranging between 2.16 and 3.87, demonstrating favorable benefits generated by the investment. Benefits highlighted in the analysis included reduced travel time, and travel cost, emission reductions, safety, cutbacks in highway congestion, travel reliability and reduced in-vehicle crowding, as examples. The report concluded that Gateway is a project of national economic significance – without the Penn Station/trans-Hudson linkage, the entire NEC rail system would be severed and fragmented and that continued economic growth is dependent on the region's mass transit system to continue to transport a diverse workforce across the Hudson. A new development company that will be known as the Gateway Development Corporation will be established to oversee the Gateway Program. Participating agencies include Port Authority of New York and New Jersey, New Jersey Transit and Amtrak.

Amtrak has embarked on preliminary engineering for the Hudson Tunnel project, a critical first step in the overall Gateway Program. AECOM as part of a joint venture with WSP Parsons Brinckerhoff and STV, is conducting the engineering effort under contract to Amtrak. Environmental studies in support of the NEPA process are underway for the new two track tunnel under the Hudson River in parallel with the preliminary engineering. AKRF under contract to New Jersey Transit is preparing the EIS documentation for FRA. The new tunnel will improve rail service reliability into Penn Station New York and permit rehabilitation of the existing North River Tunnels that were seriously damaged by flooding during Hurricane Sandy. Portal Bridge over the Hackensack River in New Jersey, another element of the Gateway Program, is gearing up for construction. This two track fixed bridge will be constructed at an elevation which will eliminate the need for the existing movable bridge and improve reliability and eliminate service disruptions associated with opening the navigation channel for river traffic.

Plans to convert the historic James A. Farley Post Office into a world-class transportation hub continued to make news. In September 2016, Governor Andrew Cuomo announced the selection of a developer/builder team of Related Companies, Vornado

Realty LP and Skanska AB to redevelop the Farley Building, creating a new 255,000 square foot Train Hall to house passenger facilities for Long Island Rail Road and Amtrak. In addition to constructing the Farley Train Hall, the Governor announced the joint venture will create 112,000 square feet of retail and nearly 588,000 square feet of office space within the Farley Building. Preconstruction work began in late fall 2016, with the new Train Hall expected to be completed by December 2020.

The Governor also announced the MTA will initiate the comprehensive redesign of the LIRR's existing 33rd Street concourse at Penn Station and complete an extensive renovation to the adjacent Seventh and Eighth Avenue subway stations. Construction on the LIRR concourse and the subway stations will conclude by or before completion of the work on the Farley Train Hall. The redesign will include nearly tripling the width of the existing corridor, which will significantly decrease pedestrian congestion and result in notably higher ceilings – providing bright lighting, new way-finding, ticketing and informational systems.

North Carolina – In 2010 North Carolina Department of Transportation (NCDOT) received a $520M Federal American Recovery & Reinvestment Act (ARRA) grant to fund passenger rail equipment, track, station and other interrelated improvements along the North Carolina Railroad Company (NCRR)/ Southeast Corridor (SEC) between Charlotte and Raleigh. The projects have been managed under the Piedmont Improvement Program (PIP). As part of the ARRA grant requirements, NCDOT has committed to operate additional passenger train frequencies and maintain the improvements. Along with new equipment and increased frequencies the other improvements are designed to increase train operating speeds. The program of interrelated projects includes adding 31 miles of double track, 12 grade-separations, closing 23 public and 15 private railroad crossings, renovating train stations in Cary, High Point, Burlington and Kannapolis. Agreements are in place with the NCRR and Norfolk Southern (NS), who operates the NCRR, to operate the two additional round trip passenger trains and to reimburse them for maintenance of the improvements through 2037. Work on PIP is scheduled for completion in September 2017 with the fourth frequency being initiated in March 2018. Mott McDonald has supported NCDOT with project development and administration, as well as numerous other firms on design and construction.

The Raleigh Union Station project is a multimodal facility planned for Downtown Raleigh's Warehouse District. The facility will be implemented in a number of phases. Phase I of Raleigh Union Station is currently under construction and is about 60 percent complete. Construction is anticipated to be completed by the end of 2017. The station is expected to be fully operational by early 2018. This phase moves passenger rail services from the current Amtrak station on Cabarrus Street to an existing warehouse on Martin Street within the railroad wye. Raleigh Union Station is anticipated to stimulate additional development in the city's Warehouse District on the west end of Downtown. Subsequent phases of Raleigh Union Station are planned to accommodate additional intercity passenger, regional commuter rail and local and regional buses, taxis, bicycles and other forms of active transportation. The Phase I project is made possible through a partnership with the FRA, NCDOT and the City of Raleigh, with assistance from GoTriangle and numerous stakeholders. Total cost of Phase 1 is approximately $60.1 million. Over $43.3 million came from federal sources including a $21 million TIGER IV grant, $15 million in ARRA funds reprogrammed from the Piedmont Improvement Program and over $6.7 million in congestion mitigation and planning funds. The remaining sources of funding include $9.25 million from NCDOT, $6 million from the City of Raleigh and $1.47 million worth of land from the Triangle Transit Authority. The architect is Clearscapes and the track and structure design team was STV/Ralph Whitehead. Urban Design Associates provided urban planning and public outreach.

The Southeast High Speed Rail Corridor (SEHSR) was designated by Congress in 1992 as running from Washington, DC through Richmond, VA and Raleigh, NC to Charlotte, NC. Additional segments were designated to Hampton Roads (1995); Charlotte through Greenville and Atlanta to Macon, and from Raleigh through Columbia and Savannah to Jacksonville; and from Macon to Jessup in 2000.

Activity from environmental planning to construction work has been underway on the sections between Washington, Richmond, Raleigh, and Charlotte with proposed maximum speeds of 110 mph. It is part of an overall plan to extend service from the existing Northeast Corridor (Boston to Washington) to destinations in the Southeast. The Washington to Charlotte, route was selected by a 2002 Tier I study, which also established the purpose and need for the project as well as the vision for passenger rail service on the corridor.

The FRA, NCDOT and the Virginia Department of Rail and Public Transportation (VDRPT) completed the Southeast High-Speed Rail Tier II Final Environmental Impact Statement

(FEIS) Raleigh to Richmond study in September 2015. The Tier II Final EIS covers the 163-mile CSXT S-Line rail corridor from Richmond to Raleigh and is a critical segment of the federally designated Southeast Corridor. Comments received on the Tier II Final EIS will be addressed in the Record of Decision (ROD), which is pending signature and issuance from FRA. Michael Baker International, Three Oaks Engineering and Mott McDonald helped prepare the EIS documentation. The first projects to be pursued under the completed document are three grade separations on the corridor in the Raleigh Area, programmed in NCDOT's Transportation Improvement Program.

Ohio - The Mid-Ohio Regional Planning Commission (MORPC), Columbus' metropolitan planning organization, is exploring how the Chicago-Ft. Wayne Tier 1 EIS study might be extended to Columbus. The current eastern limit of the study is Lima, Ohio, 40 miles east of the Indiana border. Ohio communities are raising funds to assist in data collection supporting the Tier I EIS. (See Indiana for more discussion).

While Pennsylvania communities advocate for thrice-daily service between Harrisburg and Pittsburgh, Ohio advocates and communities would like to see some of that service extended to Cleveland and Chicago. All Aboard Ohio, a grass-roots rail advocacy group, has been in discussions with the City of Youngstown on establishing an alignment between Pittsburgh and Cleveland that serves the cities.

In September 2016, the Cincinnati USA Regional Chamber and advocacy organization All Aboard Ohio hosted a conference on the Amtrak Cardinal service, with participation from states all along the Chicago to East Coast route. The Cardinal currently operates thrice weekly round trips, and the focus of the conference was an increase to daily service. In January, the City of Oxford and Miami University pledged local funding to add a Cardinal stop in Oxford.

Some station enhancement initiatives in Ohio are progressing. These include stations served by Amtrak's Lake Shore Limited and Capitol Limited routes. A long standing congressional earmark for rail enhancements has been directed toward Americans with Disabilities Act (ADA) enhancements at Toledo's Martin Luther King, Jr. Plaza transportation center and Amtrak station. Greyhound bus service was also introduced at MLK Plaza in 2016. Since 2014, Richard L. Bowen & Associates has provided design assistance for reintroducing passenger rail service to the 1925 New York Central Railroad Station in Elyria, which now functions as the Lorain County Transportation & Community Center. Funds have been identified for some station improvements at the historic Sandusky New York Central depot. A 2016 TIGER grant application for the Lakefront Multimodal Transportation Center in Cleveland was not successful, but the City intends to re-apply. (See SPEEDLINES #18 July 2016 for a feature story on the Cleveland project.)

Oklahoma – Oklahoma Department of Transportation (ODOT) continues its support of the Heartland Flyer, with one round trip daily between Fort Worth and Oklahoma City. In 2016, an Amtrak Thruway bus was implemented between Oklahoma City and Newton, Kansas connecting the Heartland Flyer with the Amtrak Southwest Chief operating between Chicago and Los Angeles.

Oklahoma DOT also initiated a Tulsa – Oklahoma City Corridor Investment Plan to define, evaluate and prioritize future investments in the Tulsa-Oklahoma City Corridor. The planning effort will include an objective evaluation of passenger rail as a means of providing inter-city connectivity between Tulsa and Oklahoma City. This effort will focus on long-term needs for inter-city transportation and will complement other planning efforts addressing regional and local transportation issues. Parsons Brinckerhoff was assisting Oklahoma DOT in preparing the Corridor Investment Plan. Since then, the privately-owned Iowa Pacific Railroad proposed operating the Eastern Flyer train between Oklahoma City to Tulsa. The Iowa Pacific Railroad services were to include a dome car, coaches and full meal service. This would be the first regular passenger service to Tulsa since 1967 and begin operating in 2015. Iowa Pacific said the start date would be further delayed, as both Oklahoma City and Tulsa considered efforts to facilitate rail service connecting the cities' downtowns.

The Texas-Oklahoma Passenger Rail Study is an evaluation of a range of passenger rail service options in an 850-mile corridor from Oklahoma City to South Texas. Oklahoma Department of Transportation (Oklahoma DOT) is an important partner in the study. The study is scheduled to conclude by the end of 2016 after the completion of a Tier I service-level environmental impact statement (EIS) and a service development plan. More details of this study are outlined under Texas as the Texas DOT is managing the study effort.

Oregon – The Oregon Department of Transportation (ODOT) and the FRA are jointly developing a Tier 1 Environmental Impact Statement

(EIS) investigating alternatives for enhanced rail passenger on the 125-mile Portland-Springfield-Eugene corridor. The corridor is part of the federally designated Pacific Northwest Rail Corridor, served today by the Amtrak Coast Starlight and the state-sponsored Amtrak Cascades. The EIS will guide state and federal decision making on rail alignments, station locations, and service characteristics (train frequencies, run times, and rolling stock technologies, e.g., diesel electric versus electric. Update on state support for the Cascades corridor is highlighted under Washington. Amtrak's Empire Builder continues to serve the state, along with various Thruway bus routes.

Pennsylvania – Pennsylvania DOT (PennDOT), in cooperation with the FRA and Norfolk Southern, completed the Keystone West High Speed Rail study in 2014. Since then, the Western Pennsylvanians for Passenger Rail and Pittsburgh Downtown Partnership have been pushing for increased service on the Pennsylvanian, which operates between Pittsburgh - Harrisburg -Philadelphia - New York City. They say there's enough demand to support three round trip trains a day in this corridor. Representatives of the state House Transportation Committee took testimony regarding additional passenger train service between Pittsburgh and Harrisburg. They are looking at ways to fund the increased service. PennDOT and Amtrak are working to develop a more comprehensive cost estimate of the service expansion, including the cost of additional infrastructure required by Norfolk Southern. Additional studies are being looked at by the Pennsylvania legislature, including extending the service west to Cleveland.

The long planned and discussed passenger rail service from the Poconos to New York is inching closer to reality. Pennsylvania has quietly been working on replacing missing tracks, installing new ties and repairing the Delaware-Lackawanna Railroad Bridge over the west branch of the Lehigh River, including wing wall and back wall restoration, bridge seat cleaning, resurfacing and the re-establishment of original bridge elevation. The restoration of the Lackawanna Cut-Off Line has already begun across the Delaware River, with 7.3 miles of track being laid to a new station to be constructed by New Jersey Transit in Andover Township in Sussex County. It's projected that the work in New Jersey will be completed by the end of 2017. New Jersey Transit is spending about $62 million from federal and state grants to rebuild that portion of the railroad. A proposed 27-mile addition would run through Monroe County and connect with the line at the Slateford Junction in Warren County. A mapped proposal in 2014 showed stations in Tobyhanna, Pocono Mountain, Analomink, East Stroudsburg and Delaware Water Gap.

Texas – FRA is preparing a Tier 1 Environmental Impact Statement (EIS) for the proposed Dallas to Houston High-Speed Rail Project. FRA's responsibility in conducting the environmental analysis is to ensure the project is federally compliant, mitigates potential impacts, and is safe. A key step in this environmental analysis process is public involvement. The Draft EIS will be published and available for public review later in 2017. AECOM is preparing the EIS on behalf of FRA and Texas Central Railway. Texas Central Railway completed a ridership and revenue forecasting study that revealed a strong demand for high-speed trains between Dallas and Houston. The ridership study by L.E.K. Consulting, demonstrated a massive and growing market for the 90-minute, 240-mile trip between North Texas and Houston, with one stop in the Brazos Valley. More than 90 percent of those in North Texas or Houston would save about an hour or more by taking the train, the study showed. Based on a broad range of sources, including extensive new research and publicly-available data, the study forecasts that nearly 5 million passengers would use the bullet train annually by 2026. By 2050, the bullet train's total market share is expected to reach almost 30 percent, or 10 million journeys.

The Texas Transportation Commission established the Commission for High-Speed Rail in the DFW Region to provide advice and counsel on the proposed Dallas-Fort Worth Core Express Service. The Commission for High-Speed Rail in the DFW Region advises on the proposed development of intercity rail corridors, new transportation policies, and funding and procurement strategies related to the implementation of potential high-speed rail in the Metroplex. The Texas Department of Transportation (TxDOT) is developing an environmental study and working with FRA, private interests and other stakeholders to examine the feasibility of a faster, limited-stop passenger rail service that could connect possible future high-speed rail lines currently being planned in Dallas and Fort Worth. The study will consider possible rail alignments, train types and speeds. Although there has been regional discussion about station concepts serving downtown Dallas, Arlington and downtown Fort Worth, specific station locations have not been determined. The Draft and Final EIS/Record of Decision should be completed in 2017. WSP Parsons Brinckerhoff is assisting TxDOT and FRA with the EIS document preparation.

TxDOT is evaluating an 850-mile corridor from Oklahoma City to South Texas. The Texas-Oklahoma Passenger Rail Study was started in 2013 and is scheduled to conclude by the end of 2017. It will document the costs, benefits and impacts of potential rail service alternatives compared to a no-build alternative as part of a Tier I EIS and a service development plan. Both of these reports will document how passenger rail could serve Texas communities and the benefits and impacts of different passenger rail choices. The study will consider the corridor as a whole, as well as three discrete portions of the corridor including, Oklahoma City to Dallas/Fort Worth; Dallas/Fort Worth to San Antonio and San Antonio to Rio Grande Valley/Corpus Christi/Laredo. CH2M Hill is conducting the study on behalf of TxDOT and FRA. The Tier I Draft EIS should be available for public comment in March/April 2017.

The Lone Star Rail District (LSRD) proposed regional passenger rail service connecting the I-35 corridor between the Austin and San Antonio has run into complications. As envisioned the purpose of the proposed project was to improve mobility, accessibility, reliability, modal choice, safety and facilitate economic development along the I-35 corridor in central and south Texas. However, the Union Pacific Railroad formally ended the planning MOU that had existed between the Lone Star Rail District and the railroad last year. However, political opponents of passenger rail seized upon this and sadly were successful at having the two MPOs in Austin and San Antonio remove the project from their long-range regional transportation plans. This triggered FHWA to rescind the Notice of Intent, which effectively ended the EIS process. Burns & McDonnell had been leading the consultant team preparing the draft environmental impact statement (EIS) before it was stopped. The two MPOs and TxDOT are involved in a multi-modal study of the I-35 corridor as noted earlier. It is suspected the conclusion of the Texas-Oklahoma Passenger Rail Study will recommend a project nearly identical to the Lone Star Rail District's project; there simply are no other good alternatives.

Virginia – Virginia has an active state-sponsored passenger rail program. Service to Roanoke, an extension of the highly-successful Lynchburg train, is among the most anticipated projects from Virginia Department of Rail and Public Transportation (DRPT). A public-private partnership with Amtrak, Norfolk Southern, the City of Roanoke and DRPT will bring intercity passenger rail service back to Roanoke for the first time in more than 35 years. The expected start date for Amtrak service to Roanoke is 2017. Currently, there is on-going study of the possibility of adding a station stop to the Roanoke extension in Bedford, Virginia. The new Roanoke Station improvements are under construction.

On October 23, 2014, FRA published a Notice of Intent in the Federal Register to prepare the Tier II EIS for the 123-mile portion of the SEHSR Corridor, which extends along an existing rail corridor owned by CSX Transportation from the Long Bridge at Arlington to just south of Richmond. The FRA and DRPT are continuing the $55.3 million Tier II EIS between Washington and Richmond (DC2RVA), which is funded by FRA, DRPT and CSXT. The purpose of the DC2RVA project is to increase the rail system capacity between Washington, D.C. and Richmond to deliver higher speed passenger rail, improve conventional speed passenger rail, expand commuter rail, and accommodate growth of freight rail service in an efficient and reliable rail corridor. The Tier II EIS is expected to be completed in 2017. HDR is supporting DRPT with the project by completing the environmental documentation.

Washington – Washington State Department of Transportation's (WSDOT) Rail Division is continuing with plans to reduce scheduled run time by 10 minutes between Seattle and Portland, implement two additional daily round trips between Seattle and Portland, and achieve an 88% on-time performance. By the end of 2017, WSDOT will have completed 20 capital projects, funded by $800 million in federal grants to improve Amtrak Cascades service.

Governor Jay Inslee is commissioning a feasibility study for a high-speed rail line between Seattle and Vancouver, British Columbia. The line would be capable of 220 MPH maximum speeds. Amtrak's Los Angeles-Seattle Coast Starlight and Chicago – Seattle Empire Builder continues to serve the state.

Wisconsin – The Wisconsin Department of Transportation (WisDOT) and Illinois Department of Transportation (IDOT), in coordination with FRA and Amtrak, are conducting an Environmental Assessment (EA) and Service Development Plan (SDP) for service improvements between Chicago and Milwaukee. A key project objective is to increase Amtrak Hiawatha service from 7 to 10 daily round trips. The EA, prepared by Quandel Consultants, was released in Fall 2016. A FONSI is expected in 2017.

VALUE CAPTURE

FINANCING FOR HSIPR PROJECTS?

Contribution By: Sasha Page, Principal, IMG Rebel

As with transit, high-speed and intercity passenger rail (HSIPR) projects often require a variety of capital and operations and maintenance (O&M) funding sources beyond grants and fares. One of these is value capture (VC), the public recovery of a portion of increased property value created from public infrastructure investment, which in the U.S. has helped fund 20-30% of some rail project costs. VC includes the development of publicly-owned property at or around stations as is common in major Japanese HSIPR stations. It also includes establishing tax increment finance (TIF) or special assessment districts (SAD) that capture incremental taxes from the new stations or an increase in taxes in areas around stations, as intercity rail stations in Denver and San Francisco have done. See the text box for the common VC mechanisms list.

This article summarizes the best practices necessary to make VC an important contributor to HSIPR funding. It is based on the recently published Guide to Value Capture Financing for Public Transportation Projects, which I co-authored with Bill Bishop and Waiching Wong. The Guide was developed on behalf the American Public Transportation Association and the Transit Cooperative Research Program.

Common VC Mechanisms

- Impact fees
- Joint development
- Negotiated exactions

- Sale or leasing of air rights
- Sales tax & special assessment districts (SAD)
- Station naming rights
- Tax increment financing (TIF).

VC is already being used to finance several projects that serve HSIPR:

• Denver Union Station (DUS): Several groups realized this $488 million project which included the redevelopment of train station and construction of intercity rail, commuter rail, light rail, and bus facilities. Over one-third of the financing was secured from TIF and SAD proceeds, property sales, and a City of Denver backstop.

• Transbay Transit Center (TTC), San Francisco: TTC is a multi-modal transportation and real estate development that will connect 11 transit systems, including high-speed rail. TTC's VC revenues have secured a loan to TTC.

The Guide describes six best practices that are necessary to achieve optimal VC as listed below and illustrated in the Figure 1:

1. Pick growing market/corridor
2. Implement appropriate transit-oriented development (TOD) and other plans
3. Obtain and apply appropriate VC tool(s)
4. Bring stakeholders together
5. Develop compelling business case
6. Structure viable financing

Pick growing market/corridor

Rail and transit infrastructure often induces value creation

in the surrounding real estate. Capturing a portion of that value is more likely if the corridor in which the facility is built has a robust real estate market. The Dulles Metrorail provides an example. For this 23-mile extension of Washington, D.C. region's heavy rail system, SADs financed one-fifth of the $5.7 billion project, possible because this was one of the region's growing corridors with five Fortune 500 company headquarters.

IMPLEMENTING APPROPRIATE TRANSIT-ORIENTED DEVELOPMENT (TOD) AND OTHER PLANS

Realizing VC requires supportive planning, land-use regulations, and zoning, including:

- Replacing density maximums with minimums,
- Modifying rules requiring segregation of various land uses,
- Reducing minimum parking requirements,
- Negotiating agreements to share value and meet policy objectives.

Obtain and apply appropriate VC tool(s)

VC regulations vary by state and local jurisdiction. Successful VC requires understanding the regulations and then seeking changes to them, where possible, a challenging process when two or more jurisdictions support a VC instrument, such as TIF.

Bring stakeholders together

HSIPR agencies need to engage early in partnerships with developers and local governments. Engaged developers may sustain long-term planning processes and may own critical properties around the project. Governments control land use and zoning and often have a strong interest in fostering economic development around stations.

DEVELOP COMPELLING BUSINESS CASES

Successful value optimizes business benefits for both public and private partners:

- Developers want a fair balance between the opportunity and the cost of VC participation.
- Local governments want to realize the rail project and other infrastructure.

STRUCTURE VIABLE FINANCING

Using VC to finance a rail project depends on following the above best practices and the nature of the VC instrument. In general, the credit rating agencies, the financial markets' gatekeepers, are wary about new real estate-dependent revenues and rarely award a project an "investment grade" rating (i.e. BBB- or higher on a Standard and Poor's scale) unless there are three plus years of stable history. SAD financings have obtained investment grade ratings since they are based on existing revenues. A realistic approach for TIFs and other VC sources is for the jurisdiction to provide a "backstop" such as sales tax revenues or a guarantee, supplementing VC revenues. TIF monies may be more appropriate to fund O&M.

VC: COMPONENT OF THE FINANCIAL PLAN

VC may be a component of a HSIPR financing plan if agencies follow the "three Cs:"

- Capture developers and development: Harness the interest of developers, often with strong local roots, who may invest in projects years before they occur;
- Don't get CCCs, but investment grade ratings: Structure project with investment grade ratings (AAA to BBB), often with a creditworthy backstop; and
- Coordinate stakeholders: Unite stakeholders, including the rail agency, local government, and developers.

FURTHER INFORMATION

The complete Guide can be downloaded at: https://www.nap.edu/download/23682 and other information is available from Sasha Page at SPage@IMGRebel.com.

> We should not be waiting until trains derail, bridges collapse and people die to adequately fund our transportation infrastructure.
>
> *-Rep. Elizabeth Esty, D-Conn.*

GETTING READY
FOR OPENING DAY!

Brightline will launch service between Miami and West Palm Beach in 2017, with service from Miami to Orlando following.

Driving from Miami to Orlando takes about four hours. Brightline will allow passengers to cover that same distance in about three hours by conveniently transporting passengers at speeds between 79 and 125 miles per hour —similar to that of the popular Acela Express that serves the Northeast.

brightline

FULL OF INNOVATIONS SET TO REINVENT TRAIN TRAVEL IN THE US

Florida's High-Speed Rail System: *Brightline will be the first time a privately owned company in the U.S. has developed and operated an express passenger rail system since the 1980's. The service will use the existing Florida East Coast Railway (FEC) corridor between Miami and Cocoa, while also building a new 40-mile (64 km) stretch of tracks along the State Road 528 corridor between Cocoa and the Orlando International Airport along with further consideration for expansion.*

Contributed By: Eugene Skoropowski

Tom Rutkowski
Chief Mechanical Officer

It is always exciting when a plan comes together and All Aboard Florida's "Brightline" is really coming together! What began as a vision in 2012, and shovels in the ground in 2014, is now scheduled to launch revenue service later this summer. Brightline will provide an important additional transportation choice for travelers between Miami, Fort Lauderdale and West Palm Beach this summer, with future service to Orlando.

The first Brightline train ("BrightBlue") was delivered by Siemens to the new Brightline Running Repair Facility in West Palm Beach, as scheduled, arriving on December 14, 2016. Its two locomotives and four coaches, are 100% Buy America compliant, with components from more than 40 suppliers in more than 20 states. Trainset #2 is

expected to arrive in late February, and each of the remaining three trains, about 4 weeks apart thereafter.

Brightline is the first fully accessible train, exceeding ADA compliance standards and providing effortless access from end-to-end, with 32" wide aisles. The trains feature automated, retractable gap-closers integrated into the door of each coach. These 'gap-closers' extend up to 12 inches from the train door to the edge of the 48" high platforms, satisfying freight train clearances without expensive gauntlet tracks or cumbersome platform mounted devices. All passengers benefit from this innovation, whether they have mobility challenges, or are just pushing strollers or rolling luggage on board. All ADA wheelchair locations in coaches have the same large window as other passengers.

"Select" and "Smart" seating is offered, and riders can reserve specific seats when booking tickets through Brightline's mobile application, website or station kiosks. Riders will also be able to add additional items, such as parking and ground transportation to their booking to further complete their travel experience, making it seamlessly connected from door to destination.

In the Select coach, the custom-designed ergonomic leather seats are 21 inches wide between armrests and, in the Smart coach, the seats are 19 inches wide between armrests, both roomier than seats on most other means of travel. Seats recline, sliding forward so not to compromise legroom of fellow passengers, and the seats are spaced 39" apart (pitch) for plentiful legroom in both Select and Smart coaches. Passengers can reserve their seats on-line, choosing from single, double, or quad seats (with table).

Tom Rutkowski, Brightline's Chief Mechanical Officer, has been personally involved in the final design, manufacturing, assembly, delivery and testing of the trains, both locomotives and coaches.

Brightline will be offering complimentary, powerful Wi-Fi, so guests can bring their own devices and have instant and reliable connectivity.

Checked baggage and bicycles will be accommodated. For those that can't leave home without their dog or cat, Brightline is pet-friendly. Small pets can be placed in carriers under the seat and special carriers will be available for larger animals.

Each coach includes a spacious ADA accessible restroom, and all restrooms feature a touchless environment. The sink is integrated into the vanity area, with a large back-lit mirror and a Dyson faucet that both dispenses water and dries hands from the same fixture, eliminating water dripping onto the floor, or paper towels strewn about the restroom.

Static and dynamic testing of the first Brightline trainset has commenced on a nine-mile test track in the West Palm Beach area. Trackwork, signals, bridge work and crossing improvements are now more than 75% complete, on schedule for a summer 2017 service start.

The new Miami Central station is an expansive, 11-acre downtown Miami development featuring retail, offices, residences and the Brightline train service. In addition to two office buildings and 800 rental units, it will also include more than 180,000 square feet of innovative retail and dining, including Central Fare, Miami's first true food hall experience. MiamiCentral will also have connectivity to existing public transit services, including Metrorail, Metromover, Metrobus and Tri-Rail.

Fort Lauderdale and West Palm Beach stations are each some 60,000 square feet, and are nearing completion with interior finishing work progressing rapidly. In each city, we will also connect with the existing transportation services, as well as with ride-share services.

The future is indeed bright in South Florida this summer, and I hope this update provides you with a glimpse into our brand new trainsets and stations…keep your eyes out for Brightline trains moving across South Florida later this summer. For more information, please visit www.gobrightline.com.

Orlando
(PHASE TWO)

West Palm Beach

Fort Lauderdale

Miami

IN THE SPOTLIGHT

TOM RUTKOWSKI
CHIEF MECHANICAL OFFICER

"A visit by a Brightline representative convinced me to move my family to Florida leaving my job with New Jersey Transit behind. But the traffic in Florida is startling. It really brings down your quality of life when you spend that much time in a car. Passenger trains are the perfect solution."

BRIGHTLINE

DONNIE MALEY
DIRECTOR, PLANNING

"The Northeast Corridor Commission brings states, transit agencies, Amtrak, and US DOT together to modernize and improve our shared rail infrastructure through increased collaboration, transparency, and accountability. Through this partnership, the Commission aims to restore a state of good repair to ensure the long-term viability of vital commuter and intercity service.."

NORTHEAST CORRIDOR COMMISSION

CAROLYN FLOWERS
TRANSIT PRACTICE LEADER

"I'm tremendously excited about continuing my career in public transportation in the private sector. I'm looking forward to providing creative, thoughtful and successful solutions to the challenges we all face."

AECOM
Leading the firm's transit/rail practice in North America

Former Acting
FEDERAL TRANSIT ADMINISTRATION
Administrator

Philadelphia

Completed in June of 2016, the Philadelphia 30th Street Station District Plan is a long-range, joint master planning effort led by Amtrak, Brandywine Realty Trust, Drexel University, the Pennsylvania Department of Transportation, and the Southeastern Pennsylvania Transportation Authority to develop a comprehensive vision for the future of the 30th Street Station District in the year 2050 and beyond.

Established over a two-year period of discovery and consultation, including five open houses, the Philadelphia Master Planning efforts covers a site with 88 acres of rail yard projected to cycle 20 to 25 million annual passenger rides through 30th Street Station. It also includes 18 million square feet of new development, 40 acres of new open space and a new civic plaza outside the station's front entrance.

U.S. Department of Transportation projections calling for substantial increases in rail transport over the next three decades mean that we, along with rail safety partners in the rail industry and at the federal, state and local levels, must work together to meet the safety challenges that accompany a rail renaissance.

NEC FUTURE

A VISION FOR GROWTH ON THE NORTHEAST CORRIDOR

NEC FUTURE is the Federal Railroad Administration's (FRA) comprehensive planning effort for the Northeast Corridor (NEC) from Washington, D.C., to Boston. As the nation's busiest rail corridor, the NEC is a vital U.S. transportation asset, and is critical to the economic future of the Northeast. Today, the NEC operates on outdated infrastructure—much of it built over 100 years ago--affecting reliability and limiting future growth. NEC FUTURE, the first major plan for the NEC since 1978, will define a long-term vision and phased investment program to achieve a state of good repair and meet the region's growing demand for rail travel.

The FRA's planning process includes extensive dialogue with stakeholders and the public. In December 2016, the FRA released the Tier 1 Final Environmental Impact Statement (EIS) for NEC FUTURE. The Tier 1 Final EIS recommends a vision for improving the NEC over the next several decades. This vision represents a balanced approach, favored by many stakeholders, that supports growth while focusing investment on the existing NEC and addressing the most immediate needs for the NEC's aging infrastructure. The FRA is currently reviewing public feedback on the Tier 1 Final EIS in preparation for a Record of Decision.

Potential benefits of growing the NEC include:

- Expanded capacity, allowing significantly more frequent intercity and regional service, improved reliability, reduced travel time, and a greater range of service options,

- Better connections for passengers, including additional one-seat rides between cities on the NEC and to and from connecting corridors, improved rail-airport connections, and service to new stations.

- Economic benefits, including expanded access to jobs and skilled workers, enhanced integration among Northeast cities, and reduced vulnerability to service disruptions as rail infrastructure is improved and new segments provide redundancy, and

- Environmental benefits, including lower greenhouse gas emissions, air quality benefits, and reduced energy use as travelers shift to rail from other modes.

The FRA is also exploring the potential for more integrated, seamless service across the NEC, with coordinated scheduling and ticketing, opportunities for run-through service at major stations, easier transfers, and more regular, predictable service patterns. These changes would not only improve passenger convenience, but could increase operating efficiency in the future.

The next step in the process is a Record of Decision which will document the formal selection of an investment program, or Selected Alternative. Next, the FRA will prepare a Service Development Plan that details the process for implementing the Selected Alternative, including a first phase of projects to address the most critical needs on the NEC. It will then be up to individual project sponsors, such as states and railroads, to move forward with specific Tier 2 projects, which will require environmental review and significant funding. To learn more, visit www.necfuture.com.

ROI FRAMEWORK

COMPLETION OF TASK 5 OF APTA'S HS&IPR STUDY

Contributed by: Charlie Quandel, P.E.

As reported in a previous edition of Speedlines, the High-Speed and Intercity Passenger Rail (HSIPR) Committee of the American Public Transportation Association commissioned a team from the University of Illinois at Chicago Urban Transportation Center, the University of Illinois at Urbana-Champaign, RailTEC,, and the Economic Development Research Group from Boston to undertake a seminal study to make the business case for investment in passenger rail projects throughout the United States. The committee anticipates receiving its final report on Sunday, March 12th during the APTA Legislative Conference.

The team recently reported on their review of two illustrative cases of high-speed rail projects that demonstrate how different impacts of HS&IPR – which occur at different spatial scales, at different points in time, and for different stakeholders -- can in fact be identified and measured. These cases also demonstrate how the various economic and societal impact elements can be represented in quantitative terms, expressed as monetary values, and interpreted as benefits when viewed from various spatial or stakeholder perspectives. A reasonable case can be made that much of our public policy tends to recognize benefits across spatial scales, such as the national government interest in supporting the growth of communities and regions (particularly when they are not already thriving

and already overwhelmed with too much economic growth).

To varying degrees, these illustrative cases also show that there is room for improvement in future studies by further expanding their breadth of coverage and completeness (beyond that already done by some past studies). The areas for improvement fall into five categories where existing studies tackle these issues but in a less complete way than could be done in the future:

1.) Modes and Study Areas: inclusion of all relevant modal alternatives and spatial scales in the benefit calculations, treated in an internally consistent manner for valuation of benefits;
2.) Access Benefits: calculation of regional access benefits to include not only the scale of same day markets (agglomeration effect), but also benefits associated with improving connectivity between cities, connectivity to airports, and expanded tourism markets;
3.) Community and Economic Development: clarification to distinguish local and regional benefits of attracting more inward investment and business activity (especially into areas where it is most needed);
4.) Productivity Benefits: measurement of the business value of increased travel time reliability that enables more effective business processes; and
5.) Local Land Development: benefits of achieving greater clustering of development around station areas, and more vibrant downtown areas.

Implications for Development of an ROI Framework. The report demonstrates that a wide variety of HS&IPR benefits can be measured and valued from different viewpoints. It also demonstrates that it can be both possible and informative to adopt two fundamentally different ways of viewing benefits: (a) from the viewpoint of today's "net present value" -- for consideration of recurring benefit and cost streams, and (b) from the viewpoint of desired future "outcomes" – for consideration of cumulative effects that will affect the future of our society and subsequent generations. Both are important. The illustrative calculation examples provided in this Chapter demonstrate that both views can be calculated, though the two cannot be simply added together in one overall benefit calculation.

The recommendations for the ROI study also address the possibility of adopting more than one viewpoint for calculating benefit/cost ratios. The individual benefit elements can support at least three different types of BCA calculations:

- The classic BCA framework, as reflected by FRA guidance, provides a consistent measurement of the efficiency of investments that generally corresponds with that of other transportation administrations (FHWA, FAA and MARAD). It adopts a "society wide" view that treats government and private sectors equally. Thus, fare collection is a transfer among parties that can be ignored. It also ignores distributional equity as well as cumulative and inter-generational impacts, though there is no real disagreement that these other factors are still relevant for relevant public policy. For that reason, the classic BCA is commonly used as one part of a larger decision framework that also considers these other effects.

- An alternative BCA framework adopted in the UK and Australia recognizes government as an interested party representing public interest. Accordingly, it adds business productivity gains and associated tax revenues as benefits, and considers public tolls and fares collected by government as reductions in required public funding for a project (as well as a factor reducing cost savings for travelers).

- Another perspective adopts the view of local or regional residents. From this angle, effects on generating more livable and attractive communities are also seen as a benefit, particularly insofar as it attracts investment to create more jobs and income. With this aspect, the value of income or GDP associated with development of transit oriented development clusters at station areas, as well as other economic growth in surrounding areas, is a local benefit. From a national policy mindset, this result may also be a desirable outcome, particularly when there are public policies supporting investment in higher density development and investment to create more jobs in urban centers.

WASHINGTON NOTES

OPPORTUNITY AND OPTIMISM ON THE FUTURE OF RAIL TRANSPORTATION

Contributed by: Sandy Bushue, Director of Business Development, Hitachi Insight Group and former Acting and Deputy Administrator at the Federal Transit Administration (FTA)

At the time of this writing, much has changed in Washington, with a new President and Congress taking office. Like always, some are exhausted and skeptical at the whirlwind pace of change from this transition, while others see opportunity and optimism. In any case, there's a new chief engineer in Washington who has made "infrastructure" one of his top priorities.

When was the last time you heard a President mention infrastructure in his inaugural address? "We will build new roads and highways and bridges and airports and tunnels and railways all across our wonderful nation," is President Trump's declared approach. If it works out with Congress, this emphasis can make a real difference in the rail industry.

Public-private partnerships (P3s) focused on repairing and revitalizing, technology innovations and public safety are expected areas of investment by the Trump Administration. While the White House and Congress have only outlined broad plans for an infrastructure spending bill, there is little doubt that passenger rail will benefit if these plans are adopted.

President Trump has also said: "What truly matters is not which party controls our government, but whether our government is controlled by the people." The people have spoken in favor of our industry, with numerous local gains from California to Georgia that were relatively unheralded in the hubbub over the national election. While the people were casting their votes for President on November 8th, they were also voting in support of huge transportation funding mechanisms:

- Los Angeles: A required two-thirds super majority of voters approved a one-half cent sales tax solely dedicated to transportation for major public transit expansions, such as the Purple Line, sidewalk improvements, systems maintenance, security, etc. Projections are $860M in annual spending.

- San Francisco: Voters approved $3.5B in bonds to rebuild the aging Bay Area Rapid Transit (BART) system, a passenger rail authority.

- Atlanta: Voters approved a 0.4 cent sales tax increase dedicated to MARTA, passenger rail and other transportation projects, which is estimated to raise $300M in five years.

- Franklin County, Ohio: Voters reapproved a 10-year one-quarter cent sales and use tax

to expand and improve Central OH Transportation Authority's (COTA) bus service, which is expected to raise $63M in funding per year.

President Trump's transition team has compiled a nationwide "working list" of 50 urban development projects totaling $137.5B. Of these, 12 are rail projects, including the Gateway Program, to reconstruct the Northeast Corridor; the Texas Central Railway High Speed Rail project; and Washington DC Union Station's Expansion and Rehab, which centers on fortifying its rail infrastructure. The list also includes research and development funding for the National Research Lab for Infrastructure to collaborate with the private sector on development of new technologies for the future.

Europe and Asia have vastly improved transportation operations efficiencies in both performance and costs by leveraging solutions around big data, analytics and the internet of things (IoT). It is imperative that the United States begins to also incorporate these technologies in order to compete.

Innovating and partnering are the two major factors that can offer unlimited ways to deliver a successful project. Although P3s aren't the only solution to improve infrastructure, the model can make a difference: In recent years, projects such as All Aboard Florida, Denver Eagle P3, and the Texas High Speed Rail from Houston to Dallas, have paved the way for the P3 model to be more broadly adopted. Although each of these projects had a different funding and delivery model, they are prime examples of how P3s can be successfully structured.

As I wrote in USA Today, another P3 model can be embraced in operations and maintenance. Commuter rails are finding much success in safety, cost savings and increased performance by outsourcing maintenance and/or operations to private companies. Rail properties should consider the cost/benefit analysis and potential safety enhancements of a Transportation-as-a-Service model.

Secretary Chao said in her Senate hearings, "The U.S. Department of Transportation has a rare opportunity to shape the transformation of our critical infrastructure…First and foremost, safety will continue to be the primary objective." Safety will remain the overlying foundation of this transportation renaissance.

For example, my company, Hitachi, uses computer vision and advanced analytic technologies to provide intrusion detection, object and facial recognition and improvements to CCTV, along with signaling and communications controls systems. The transportation safety culture will be uncompromised and strengthened by the application of these types of innovative technological advancements.

What about Amtrak? The success of the Northeast Corridor proves that rail services between mega cities are in high demand. However, the route is experiencing capacity issues that threaten its burgeoning ridership, and customers are demanding more and better amenities.

Coming from New York City, President Trump understands the importance of the NEC, and so it is unlikely to be forgotten in his Administration. In a March 2016 speech, Trump said, "You go to China, they have trains that go 300 miles an hour. We have trains that go 'chug, chug, chug' and then they have to stop because the tracks split, right?"

In the President's push to improve infrastructure, he may well benefit from being in the enviable position of his party holding a majority stake in both the House and Senate, which means he can likely fast-track an infrastructure bill that the majority agrees on. Whether Congress will approve the spending levels the Administration seeks is a thorny question.

The first 100 days can be quickly eaten up. There are discussions that an infrastructure spending bill may be attached to tax reform legislation in the first 200 days. It's just an idea.

In the end, President Trump and his Administration's impact on infrastructure and passenger rail services won't be measured in 100 days, or even 200 days. We can likely expect rapid movement toward some of the changes outlined above, but the real impact of change may not be determined until the end of the Trump presidency in four to eight years.

For now, though, new opportunity and optimism are the future for rail.