

Intercity Rail Passenger Systems Update



No. 24

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Current Research and Development in Intercity Rail Passenger Systems

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Intercity Rail Passenger Systems Update is published exclusively on the Internet. The table of contents offers links directly to each article, or you can scroll down to read the entire newsletter. Please keep your bookmark at www.trb.org/Publications/PubsStandingCommitteeNewsletters.aspx for upcoming editions.

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NOTE FROM THE CHAIR

Education as Catalyst

Intercity passenger rail is a mode of transportation that defies easy classification—the only common element of its systems is the steel fixed guideways directing vehicles down a path. Some alignments serve both commuters and long-distance travelers, complementing nearby highways that serve the same communities. Other corridors directly compete—on a total corridor transit time and fare basis—with corollary commercial air services. Air-competitive alignments are rare in North America but serve as a major driver for investment in the high-speed, high-service corridors that have been built over the past three decades in most of the developed world.

Three of today's largest U.S. high-speed rail projects rely on very different business models that reflect local conditions, economic opportunities, and levels of public agency support. First, All Aboard Florida is an intrastate, privately funded service initiative that will connect Orlando to West Palm Beach, Fort Lauderdale, and Miami, over shared freight rail tracks at conventional speeds. Redevelopment of valuable urban real estate in and around the station sites appears to be a major economic driver for the project. Henry Flagler likely would approve.

Then, Texas Central Railway's Dallas–Houston project relies on Japanese *Shinkansen* high-speed rail technology and, given the experience in other countries, is very likely to dominate commercial travel between the burgeoning urban centers. Because the route is designed as a dedicated, closed system, it can benefit from the five decades of experience with this fully integrated product. Funding is private but would provide the Japanese with a strategic North American beachhead for the *Shinkansen* technology. Dallas–Houston is an exceptionally favorable location for this approach: the combination of distance, topography, and a rapidly growing base of travelers is rare, if not unique.

Finally, California high-speed rail continues to move forward, despite many legal challenges and construction in one of the United States' most complex planning environments. Much of the route will be dedicated, but trains will share track with commuter operations in the final approach into major urban centers. The state has promised long-term, dedicated state capital funding support. This funding would draw from “cap and trade” receipts that are projected as substantial—more than \$100 million per year—but are hard to pin down because of the uncharted nature of the cap-and-trade regime. As this newsletter goes to press, it is expected that the California High-Speed Rail Authority will be reviewing competitive rolling stock bids from various international suppliers. Private financing elements have been solicited as part of the request for proposals process for this equipment.

The three distinct approaches summarized above highlight the important role that the Standing Committee on Intercity Passenger Rail (AR010) can play in addressing some of the unique challenges associated with bringing modern rail transportation to North America. Encouraging research and identifying “best practices” for rail

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service development can help accelerate the rebirth of passenger rail transportation. As compared to those in other transportation modes, our committee members have a particularly big assignment!

Come to the TRB 95th Annual Meeting, January 10–14, 2016, to hear from U.S. and international experts on what is working and what we can do to educate and deliver value to a public that—more and more—demonstrates its hunger for new mobility options.

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EDITOR'S INTRODUCTION

Continuing with our reporting on federally funded state projects, this newsletter leads off with “New Haven–Hartford–Springfield Rail Program: Building Capacity for a 21st-Century Rail Line,” an article on the New Haven Hartford Rail Program, which received \$190.9 million in federal funding and \$174.7 million from the state of Connecticut. Jeffrey Schultz, Senior Principal Technical Specialist at WSP–Parsons Brinckerhoff, authored the article.

The second article, “European Union Projects: Researching the Future of Railways in Europe,” takes us overseas and discusses research that focuses on the development of a Europeanwide, competitive, and efficient transportation system; specifically, studies that have led to a vision of a new mobility culture including rail as a significant system component. The vision calls for implementation of policy that emphasizes rail development within the context of spatial planning and integration with other modes of transport. Frauke Jürgens, formerly of the Allianz pro Schiene, and Claus Doll, senior researcher at Fraunhofer Institute for Systems and Innovation Research in Karlsruhe, Germany, contributed to this article.

The third article, “Passenger and Freight Rail Segregation: Is it Time?,” reports on a TRB 2015 Annual Meeting workshop cosponsored by the Commuter Rail and Intercity Passenger Rail Committees. This discussion still is of high importance to the success of intercity passenger rail in the country. The workshop addressed the current state of shared rail corridors, the rationale for planning for separate passenger and freight rail service rights-of-way, and next steps for separating the services. The article was authored by Eric Peterson, chair of the Intermodal Subcommittee of the Intercity Passenger Rail Committee.

Plans for the upcoming TRB Annual Meeting are under way as we get closer to the meeting dates: January 10–14, 2016. The theme is “Research Convergence for a Multimodal Future.” Intermodal integration is of clear importance to successful rail operations, both in the United States and internationally, and our committee recognizes its importance—especially as it relates to multimodal access to passenger rail service.

Before the Annual Meeting, the Committee sponsored a workshop in Los Angeles, California, on September 23, 2015, to share information on the efforts to improve the integration of public transit within a family of transit services and with other modes that could serve the needs of public transit riders for the first and last mile of their journeys. A link to a video of this workshop will be available shortly on the committee website at <http://ar010.york.cuny>.

Other subcommittee work is under way in preparation for the Annual Meeting. The Research Subcommittee, which issued its annual call for Annual Meeting papers in the spring, assigned 36 paper topics for review. Members reached out to multiple reviewers for each topic and requested 144 reviews—of which approximately 92 percent were completed. Be sure to check the Annual Meeting program for times and locations of the presentations sponsored by the Intercity Passenger Rail Committee. Thanks to all of our friends and members for their hard and conscientious efforts in conducting the reviews.

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Audience members listen to panelists at the workshop “Passenger and Freight Rail Segregation: Is It Time?” on Sunday, January 11, 2015. (Photo: Malcolm Kenton)

The Socioeconomic and Financial Aspects Subcommittee has added a component to the AR010 website that provides links to research that is relevant to the subcommittee’s mission. Sergio E. Martinez, WSP–Parsons Brinckerhoff and friend of the committee, explains this resource in our fourth article, “Socioeconomic and Financial Aspects Subcommittee–Related Research Available Online.”

Also, be sure to check out the committee website at <http://ar010.york.cuny>. Along with the links to other research sources described above, the website also features older issues of the newsletter, names of committee members, minutes of previous committee meetings, and other items of interest. Also, if you have colleagues and friends who are not receiving this newsletter, but who may be interested, please forward them the link to this issue. Also, advise them to register as a friend of the committee at MyTRB.org.

We will see you soon at the TRB Annual Meeting.

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NEW HAVEN–HARTFORD–SPRINGFIELD RAIL PROGRAM: BUILDING CAPACITY FOR A 21st-CENTURY RAIL LINE

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The New Haven–Hartford–Springfield (NHHS) Rail Program is one of the nation's most ambitious efforts to revitalize intercity passenger rail services. With \$190.9 million in federal funding and \$174.7 million from the state of Connecticut, the program comprises one of the nation's largest investments in intercity rail passenger service. When NHHS is completed in 2017, the Hartford Line, which runs between New Haven, Connecticut, and Springfield, Massachusetts, will provide faster, more frequent, and more reliable rail passenger services. The program also is expected to add significantly to the current annual ridership of 400,000.

This historic rail link has been significant to Connecticut since its completion in 1844. As the first rail link between New Haven and Boston, Massachusetts, the “inland route” connected the key industrial centers of New England and provided essential rail freight and passenger services. As with most of the U.S. rail network when Interstate highways provided alternatives to railways, however, the rail link experienced service contractions. Today, the Hartford Line is just as important to Connecticut as it was in the past, and its major reconstruction program will restore capacity and enable a substantial expansion of rail passenger service.

In 1976, Amtrak acquired the Hartford Line and provided approximately six round trips per day. Most of the line was double track, but an Amtrak project in the late 1980s reduced much of the line to single track with passing sidings. For years, the state of Connecticut knew that bringing back the second track was critical for future service expansion, so when funding from the Federal Railroad Administration's (FRA's) High-Speed Rail Program became available in 2009, the extensive plans for rail expansion took a significant leap forward.

The NHHS Rail Program is currently in construction, with completion anticipated in 2017, and is part of a larger regional vision for expanded rail passenger service throughout New England and into Canada. The capital improvements planned for the line are extensive. With only 62 miles between New Haven and Springfield, the line currently consists of 23.3 miles of double track and 38.7 miles of single track. Various construction projects within the overall program will virtually restore the entire double track south of Hartford and will add 5 miles between Hartford and Windsor. Along with the restored capacity, new signal systems and high-speed track will enable trains to operate at speeds of up to 110 mph. This is likely to reduce trip times by about six percent between Springfield and New Haven. New communication lines, upgraded bridges, and improved drainage systems will bring the rail line into a state of good repair.

Safety is the foundation of all work in the program. The Advanced Civil Speed Enforcement System positive train control system is being installed along the entire route to improve the safety of the Hartford Line train service. Significant improvements to grade crossing warning devices will further improve safety on the route.

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**Cross-track excavation at MIDLAND Interlocking in Hartford, Connecticut.
(Photo: NHHS Rail Program)**

A critical objective of the NHHS Rail Program is to modernize and update rail stations along the line to improve the facilities and to connect communities. New stations are being constructed in the Connecticut stations of Wallingford, Meriden, and Berlin, with improvements to be made at Hartford Union Station. All will have high-level platforms, expanded parking, and additional passenger-focused amenities.

Furthermore, many of these new stations have become the focus of local transit-oriented development (TOD) activities. In Meriden, construction has started on a new mixed-use development near the station. Other communities are seeking to implement TOD zones near proposed stations on the Hartford Line as a way to support economic development and promote livable communities. In early 2015, Governor Dannel Malloy of Connecticut announced design funds for six more stations on the Hartford Line; design efforts are under way for those stations.

In Massachusetts, at the northern anchor of the NHHS program, the Springfield Redevelopment Authority is in the middle of an \$85 million project to rebuild the historic Springfield Union Station. Opened in 1926 and closed in the 1970s, the station served all major railroads in the region. Its redevelopment is part of a larger downtown economic revitalization program that includes a large hotel and casino development. When completed in late 2016, the new Springfield Union Station will house local transit buses, intercity rail, intercity buses, office and retail space, and parking for 377 vehicles.

When the improvements are completed, an extensive service expansion will be launched on this line, returning service to levels not seen in decades. Only 12 passenger trains currently operate on the line each weekday, but service will expand to 34 trains between Hartford and New Haven, with 24 of those operating to and from Springfield.

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During design and planning of the infrastructure improvements, extensive modeling and analysis of the railroad network operations had ensured that the planned improvements would operate reliably and would make connections in New Haven with Amtrak and Metro North Railroad. Extensive local transit bus services in New Haven, Hartford, and Springfield also will provide “last mile” connecting transportation services.

In addition to extensive network analyses, other key service planning activities are ongoing. Onboard ridership surveys were conducted in 2012 to help understand the composition of current rail ridership and to examine the needs and desires for expanded service. These efforts then expanded in 2014 into development of a logo and a brand for the project, coined the Hartford Line. As the service launch approaches, efforts will shift to developing communication and marketing plans to ensure a seamless rollout of expanded service.

With new service launching in 2017, passengers will have new options for traveling along the I-91 corridor. Furthermore, TOD sites near the new stations are appearing and growing. The NHHS Rail Program is on track to deliver new economic growth, help create livable communities, and expand rail passenger services in the region.

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EUROPEAN UNION PROJECTS: RESEARCHING THE FUTURE OF RAILWAYS IN EUROPE

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Several recent studies have been commissioned in Europe on the development of a Europeanwide, competitive, efficient transportation system. The majority of these studies have envisioned a new culture of mobility, with rail as a significant component. The approaches presented by researchers and industry members ranged from technical visions to holistic concepts and called for the implementation of a policy that emphasizes rail development in the context of spatial planning and integration of rail with other transportation modes.

Following these trends, in March 2011 the European Commission (EC) published a white paper, *Roadmap to a Single European Transport Area: Towards a Competitive and Resource-Efficient Transport System*, which called for a comprehensive strategy for a competitive transportation system that would “increase mobility, remove major barriers in key areas, and fuel growth and employment.”¹ The paper provided strategic goals for developing this system: completing the European high-speed rail network by 2050, tripling the length of the existing high-speed rail network by 2030, maintaining a dense railway network in all member states, and transitioning the majority of medium-distance passenger transportation to rail by 2050.² According to the EC white paper, “30 percent of road freight over 300 km should shift to other modes such as rail and waterborne transportation by 2030 and more than 50 percent by 2050, facilitated by efficient and green freight corridors.”

To translate the rather numerical targets of the white paper into a policy strategy and implementation plan, two research consortia were contracted in 2012 under the 7th Framework Programme, the European Union’s (EU’s) instrument for funding research and technical development in Europe.³ The projects were LivingRAIL—Living in a Sustainable World Focused on Electrified Rail—coordinated by the Fraunhofer Institute for Systems and Innovation Research, and SPIDER Plus—Sustainable Plan for Integrated Development through the European Rail Network—led by the HaCon consulting group.

Although the two consortia had answered the same calls for proposals and both identified strategies to implement the white paper targets, the research progressed independently over the projects’ lifetimes. Only in their final stages did the consortia join forces to develop a common passenger and freight mobility vision for 2050 based on the goals outlined in the white paper. Though they used different methodologies, the consortia’s conclusions resulted in action plans involving increased service by electrified rail to meet white paper goals.

¹ *Roadmap to a Single European Transport Area: Towards a Competitive and Resource-Efficient Transport System*, European Commission, Brussels, March 28, 2011.

^{2,3} *LivingRAIL and SPIDER Plus. Rail Towards 2050: Vision and Roadmap for Sustainable Mobility*. Hannover, Karlsruhe, Berlin, 2015.

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Vision 2050, the overall picture. (Image: Fraunhofer Institute for Systems and Innovation)

The SPIDER Plus analysis, undertaken by an interdisciplinary consortium of 13 European partners, assessed future options with a focus on the freight market as based on current conditions. The future options in the freight market then were compared to the desired future target: moving at least 50 percent of medium- and long-distance goods by rail and inland navigation by 2050. To put the target into perspective, in Europe the share of ton-kilometers of freight by rail is below 20 percent; in the United States, the freight rail share is close to 40 percent. Tripling the required mode shift is hampered by several bottlenecks: congested networks, different technical and organizational structures among countries, state intervention and protectionism on national railways, and a lack of customer-oriented culture in most railways.⁴

Although both studies looked at passenger and freight markets, the LivingRAIL team focused more on the passenger side. A collaboration between research institutes, alliances promoting the railways, and eight rail partners from six European countries, the project was completed in May 2015. For their analysis, the LivingRAIL researchers conducted a series of workshops, literature reviews, and modeling. The resulting vision is a strengthened rail system embedded within a new culture of mobility that takes environmental protection, cost effectiveness, and the needs of customers equally seriously.

To be able to meet the targets in the EU white paper, researchers estimated that rail operators in Europe will have to increase their market share of 8 percent of passenger-kilometers across the EU, to three to five times that number. By comparison, the rail intercity passenger share in the United States is approximately 1 percent. Though ambitious, the 50 percent target for medium-distance intercity trips and urban mobility is considered achievable, according to LivingRAIL researchers.⁵

⁴ For more information on SPIDER Plus, visit www.spiderplus-project.eu.

⁵ Doll, C., F. Jürgens, et al. *The LivingRAIL Railmap 2050*. LivingRAIL Deliverable 5.1 EC FP7, Fraunhofer ISI, Karlsruhe, 2015.

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The envisioned transportation system is equally supported by customers, politicians, and rail operators. In the LivingRAIL roadmap, well-known transport policy demands—upgrading infrastructure, fairer competitive conditions among different modes of transportation, and uniform European standards for railways—are embedded in measures that facilitate a values shift toward more environmental protection and spatial planning that is no longer centered on road transportation.

Aside from the necessary expansion of rail network capacity and modernizing and standardizing technologies, the LivingRAIL roadmap features two measures of high importance and comparably low cost: reforming railways and inclusive planning. Reforming railways means transforming the rail sector from companies whose primary focus is on optimizing processes and cutting costs into modern institutions with a business culture centered on the needs and requirements of passenger and freight customers. To reform the transportation system, policy changes will be needed; inclusive planning would be beneficial to make these changes. Government organizations across national borders with differing policies, railroads, and networks—as well as associated transport service providers—need to work together to implement the envisaged paradigm shift in passenger and freight mobility behavior.

The following list provides a snapshot of the most relevant actions for implementing the EC white paper targets:

- *Quality and soft measures are most decisive.* Transport model applications indicate that by high-speed investments and lower prices, we only gain up to seven percentage points in mode share for railways in central European high-density areas. This share is even less in low-density areas in the European or national periphery. The remaining 30 percent increase in mode share necessary to achieve the white paper targets needs to come from quality—that is, punctuality, reliability, service, and accessibility—and from policy measures. Railways, public administrations, businesses, and users are asked to cooperate to achieve the targets for a successful railway future.
- *More high speed helps only a little.* If we extend the European high-speed network we will most likely achieve impressive mode shift effects along these lines. In many countries, we have around 50 percent market share of rail along the fast axes, including Paris–Lyon, Paris–Brussels, Madrid–Barcelona, or Frankfurt–Berlin. Even if we increase the European high-speed rail track length of 10,000 kilometers fourfold by 2050, the share of passenger-kilometers profiting from these services will remain comparably small in relation to overall rail demand. The overall mode split effect of additional fast lines, therefore, is two percentage points or fewer. Smooth and reliable connections between all regions are needed more—possibly with speeds between 150 and 200 kilometers per hour and with well-designed accessibility of high-speed infrastructures.
- *Making the railways cheaper helps more.* Freeing the market of commercial bus services in Germany, and the success of Bla Bla Car in France and Uber in London, demonstrates the high price sensitivity of travelers. Cheap tickets have a visible impact on mode shares. By lowering rail passenger fares and freight rates by 30 percent and increasing road transport costs by 20 percent relative to current price levels, the mode share of the railways would rise by four to five percentage points.
- *Sustainability impacts are overwhelming.* One might ask why we should undertake the enormous endeavor to meet the goals of the LivingRAIL plan and to revitalize such a traditional mobility system. This justification is provided by the impressive sustainability gains we could achieve by a large-scale shift to rail. Total transport greenhouse gas emissions would fall by 40 percent without any

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other technical measure. Improving car and truck efficiency simultaneously could move the transport sector toward the 80 percent reduction target needed to remain below a 2°C global warming limit. Similar reductions are envisaged for noise, but somewhat less for accidents. Even more impacts are predicted for air pollutant reduction.⁶

- *Funding, of course, is a significant issue if these reforms are to be accomplished.* Total additional costs are estimated at €1.35 trillion for all of Europe over the 35-year period from 2015 to 2050. The most expensive single measure—completing the European high-speed and freight networks—is estimated at €416 billion.⁷
- *Some additional sources of funding have been identified.* With a 400 to 500 percent increase in rail demand, passenger and freight customer revenues are expected to grow by €2.52 trillion between 2015 and 2050—and this despite a 50 percent cut in passenger fares and freight rates that is assumed to attract more demand, according to the analysis.⁸ Together with road user charges across Europe and an earmarking of 25 percent for railway projects, the Railmap could be fully financed, with some funds remaining for mode shift measures not foreseen in the LivingRAIL plan.⁹

Additional details, including six scientific reports based on this research, can be found on the LivingRAIL project website, www.livingrail.eu.

⁶ *The LivingRAIL Railmap 2050*, 2015; p. 77.

⁷⁻⁹ *The LivingRAIL Railmap 2050*, 2015; p. 78.

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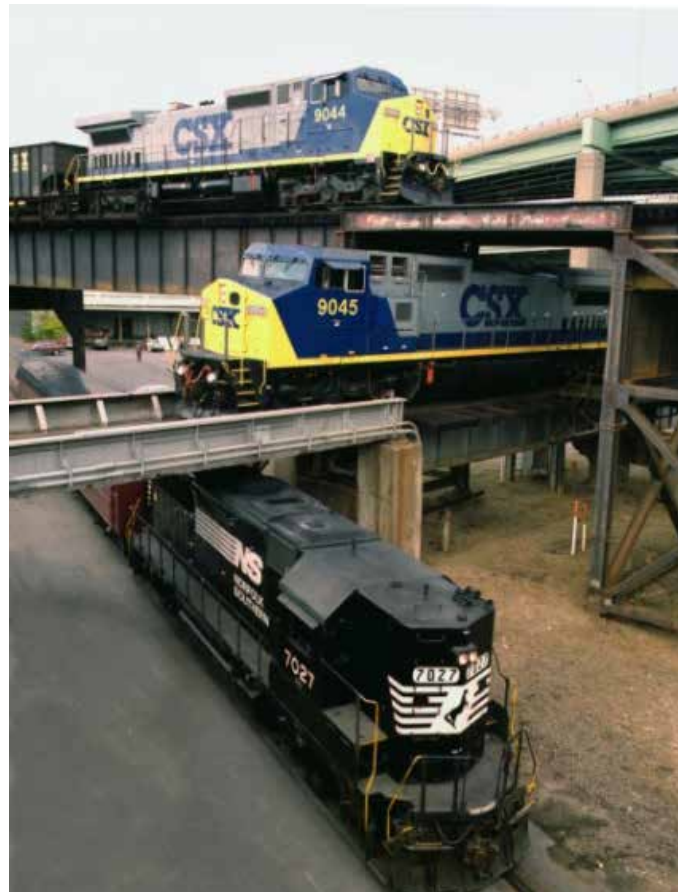
PASSENGER AND FREIGHT RAIL SEGREGATION:
IS IT TIME?

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The day may be near when the American railroad industry will need to segregate passenger and freight service into separate rights-of-way—that was the inference drawn from a three-hour, three-part panel workshop at the TRB 2015 Annual Meeting in Washington, D.C. in January.

The workshop, jointly sponsored by TRB’s Standing Committees on Intercity Passenger Rail and Commuter Rail Transportation, featured presentations from representatives of industry, state agencies, and academic institutions and other policy experts. Addressed were the current state of shared rail corridors, the rationale for planning for separate passenger and freight rail service rights-of-way, and next steps for separating the services.



CSX and Norfolk Southern trains crossing near Richmond, Virginia.
(Photo: Virginia Department of Rail and Public Transportation)

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France's TGV system links cities across the country and with other European nations.
(Photo: Kilroy1313 at railpictures.net)

Current Practice

Charles H. Banks, president of R. L. Banks and Associates, moderated the opening panel. D. J. Mitchell, Burlington Northern Santa Fe Railway Company (BNSF); Emily Stock, Virginia Department of Rail and Public Transportation; and Jason Maga, Amtrak, reviewed the current state and near-term plans of their organizations. In Virginia, Stock noted, Amtrak, CSX, Virginia Railway Express (VRE), and Norfolk Southern all operate over shared rights-of-way, with both VRE and Amtrak seeking to expand service. Stock said that CSX in Virginia has presented opportunities for new cooperation and development of new capacity, especially in the Washington, D.C.–Richmond corridor.

Mitchell told the workshop audience that BNSF operates with three governing principles: cash, capacity, and capability. He said that questions of service density take into account track structure, available dispatching tools, and the requirements of memoranda of understanding between BNSF and other rail services accessing the BNSF network. He noted that redundancy, reliability, and recoverability were guided by the condition of the railroad's physical plant, the rolling stock to be used, and the service plans of both BNSF and the passenger rail service provider. In addition, operating choices included temporal separation, dedicated tracks, and shared use. BNSF faces many capacity investment choices, Mitchell noted: staging tracks, long-haul tracks, sidings, and station capacity. He said modeling and measuring were two critical lessons learned from BNSF's shared-use experience.

According to Maga, separation and segregation of service does not always make sense. Fifty percent of all Amtrak trains reach 100 mph on shared tracks; FRA suggests that passenger trains operating at 90 to 110 mph can run on shared tracks. He observed that trains traveling at 115 mph or higher probably should operate on separate tracks, segregated from slower-moving trains.

Maga noted that the disadvantages of segregated service include potential capacity underutilization, lost opportunities for mutual benefits, environmental impacts, and the cost of property takings. He observed that there are solid reasons for pursuing service segregation strategies, however, including track geometry, existing rights-of-way, maintenance and operating costs, the ability to expand capacity, and other situational factors and alternatives.

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Panel speakers (left to right): moderator Charlie Banks, R. L. Banks and Associates; D. J. Mitchell, BNSF; and Jason Maga, Amtrak. (Photo: Malcolm Kenton)

Rationale for Planning the Separation of Passenger and Freight Rail Service

The second panel, which was moderated by Martin Peirtucha, director of the Thomas D. Larson Pennsylvania Transportation Institute at Penn State University, focused on the options and considerations for separating passenger and freight rail services.

According to Katie Kam, Center for Transportation Research, University of Texas at Austin, highway rights-of-way offer an attractive alternative and, in many cases, unique advantages for developing segregated rail service, based on her research in Texas. She added that because highway rights-of-way have already gone through the environmental review process, completing the regulatory phase of rail service development may be somewhat streamlined.

Roy Kienitz, former U.S. Department of Transportation Under Secretary for Policy, observed that rail policy and the consideration of whether to segregate service comes down to rail economics: it depends on the amount of money required and where the money comes from. Based on current experience in the United States, Kienitz noted, shared use often works but sometimes does not; when it does not work, segregation planning is needed.

Rail expert and lawyer Chuck Spitulnik told the workshop audience that he spends most of his time trying to determine how to integrate, not segregate, freight and passenger rail service. Like Kienitz, Spitulnik observed that if you have the money, the alternative that mitigates environmental impacts makes sense. Integrated commuter and freight services make sense because they have similar characteristics, he noted, but high-speed rail (115 mph and faster) is a very different issue that demands its own right-of-way. As a result, he said, more capacity will be needed to accommodate high-speed trains. Rail safety regulations will affect the ability to have higher-speed trains, particularly from a cost perspective.

Spitulnik suggested a range of additional issues: How will the new capacity or infrastructure be used? How will it be scheduled, and will it be reliable and timely? And finally, how will this new capacity be financed, will it attract private investment, and what will be the return on this investment?

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Panel moderator Curtis Morgan, Texas A&M Transportation Institute, and workshop organizer, Eric Peterson, chair of the AR010 Intermodal Subcommittee.
(Photo: Malcolm Kenton)

Next Steps Toward Segregating Freight and Passenger Rail Service

Curtis Morgan, program manager and assistant research scientist for freight and passenger rail at Texas A&M Transportation Institute, facilitated the final panel of the workshop, focusing on the next steps for planning the separation of freight and passenger rail service.

Panelists Jeff Morales, CEO of the California High-Speed Rail Authority; Steve Clark, ARUP; and Jennifer Hu, Texas Central High-Speed Railway, offered perspectives on how two high-speed rail projects under development in the United States are dealing with the issues of rail service separation and the role of their projects in California and Texas.

Morales noted that the California project is more than a passenger train system: “It’s an economic driver. It’s an environmental enhancer, a capacity builder, and a link to separate areas of economic and cultural activities.”

Hu described the Texas Central high-speed rail project as in the early stages of its environmental impact study process. She noted that the Texas project intends to use Japanese *Shinkansen* technology in an existing freight rail right-of-way.

Clark noted, however, that track fouling—freight cars derailling and spilling onto rail occupied by a passenger train and vice versa—is a serious concern in identifying a right-of-way for the Texas project. “Risk is not arbitrary,” Clark said. “It can be quantified and planners need to understand the ‘danger zone.’”

Future Research and Policy Debate

As the presentations of the workshop suggest, there is significant need for further research into the pluses and minuses of rail service separation, as well as exploration of its policy implications. As the United States moves forward in its efforts to improve intercity passenger rail service and introduce true high-speed rail service, serious consideration will need to be given to the safety, environmental, mobility, and economic aspects of separating—or not separating—freight and passenger rail service.

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SOCIOECONOMIC AND FINANCIAL ASPECTS SUBCOMMITTEE–RELATED RESEARCH AVAILABLE ONLINE

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Sergio Martinez is an engineer and planner at WSP–Parsons Brinckerhoff in Austin, Texas. He is a friend of the Intercity Passenger Rail Committee.

One of the goals of the Socioeconomic and Financial Aspects of Intercity Passenger Rail Subcommittee [AR010(2)] is to share research relevant to its mission, and the simplest and best way to accomplish this is posting it on the subcommittee's website.¹ Ideally, the website will become a resource for academics and industry experts to find published papers on the latest developments in intercity and high-speed rail.

TRB's Transportation Research Information Database (TRID) was used to find relevant studies (<http://trid.trb.org>). As described on its website TRID is "an integrated database that combines the records from TRB's Transportation Research Information Services Database and the Organisation for Economic Cooperation and Development's Joint Transport Research Centre's International Transport Research Documentation Database."

Searches were conducted for recent papers related to the subcommittee's mission, with priority given to research about U.S. domestic issues. The studies that were determined to be consistent with the search objectives then were classified into one or more of the following categories: accessibility, economics, environmental and sustainability, funding and finance, land use and development, operations and service planning, policy and governance, modeling, safety, and other.

Links to obtain access to the papers are available on the subcommittee's website: http://ar010.york.cuny.edu/sub/socio_economic.

If you are aware of recent peer-reviewed studies that fit the mission of the subcommittee, please contact Dominic Spaethling: Dspaethling@hntb.com.

¹ The mission of the Socioeconomic and Finance Subcommittee [AR010(2)] of the Standing Committee on Intercity Passenger Rail (AR010) is to focus on areas of research related to intercity and high-speed rail systems—specifically, how they interact with the natural and human environment; how they affect local and regional economies both directly and indirectly; and how they are funded and financed so as to attain social, economic, and environmental sustainability.

We look forward to your feedback on the format and the content of this publication. Comments on this newsletter, and most especially, continued contributions by committee members, friends of the committee, and others can be sent to the editor:

Penny Eickemeyer
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The Transportation Research Board's Committee on Intercity Passenger Rail (AR010) is concerned with research that will lead to better planning and implementation of intercity rail passenger systems, with particular emphasis on the full range of high-speed systems including new technology. This research will include demand analysis, financial considerations, economic impacts (including consideration of user and social benefits), and institutional arrangements including public–private partnerships. The research should also address impacts on other rail operations, coordination with other modes, rail–highway interfaces, corridor versus system concerns, technology assessment, environmental impacts, and implementation strategies.