Overview of Policy Brief

There is broad consensus among transportation experts and elected officials of both political parties that the dense, heavily urbanized Northeast megaregion is more suited for high-speed rail than any place in America. Currently, 80 percent of the nation’s rail transit ridership (including subway and light rail) takes place in the Northeast. The Northeast Corridor rail line, owned by Amtrak and three Northeastern states, stretching from Washington, DC to New York to Boston, carries over 250 million annual rail passengers.

In 2010, two studies demonstrated that true, world-class high-speed rail is feasible in the Northeast Corridor. Both studies found that by adding two new dedicated tracks (separated from other rail traffic) for high-speed trains and upgrading the existing corridor, the Northeast megaregion’s geography and its $2.9 trillion economy would be transformed, with faster, more frequent, and more reliable rail connections among its major economic hubs and several of its busiest international airports (University of Pennsylvania 2010, Amtrak 2010).

These investments would make cities of the Northeast the most accessible, convenient, and environmentally friendly places in the country to travel and do business, powering economic growth beneficial to the region and the nation.

Building high-speed rail in the Northeast Corridor is a generational project that requires long-range, strategic planning. The plan must adopt a phased approach to implementation with early stage action items that have clear benefits for current passengers in order to build and maintain support for the long-term vision. With high unemployment in the construction industry, record low interest rates, and the continued need for stimulating economic development, now is the right time to advance this ambitious investment.

This brief provides information on the current needs on the Northeast Corridor, plans for high-speed rail, and the political, governance, and financial hurdles that must be overcome in order to make this vision a reality.
The Market for High-Speed Rail in the Northeast Megaregion

The Northeast megaregion, the nation’s largest contiguous urbanized area, is home to 52 million people, who produce roughly 20 percent of America’s gross domestic product on just 2 percent of its land area. This makes it the densest and most economically productive region in the United States. By mid-century, the Northeast’s population is projected to add an additional 18 million people and its economy could make significant strides as well. The Northeast’s ability to move people and goods quickly, efficiently, and safely on its freight and passenger transportation systems is fundamental to its continued growth and prosperity.

However, the density that makes the region so unique and productive also causes severe crowding on the region’s highways, runways, and railways. The transportation infrastructure in the Northeast is rapidly aging and has become increasingly congested over time. Four of the top ten most congested highways in the country are in the Northeast, number one being the southbound segment of I-95 in the Bronx. Six of the top ten most delay-prone airports in the country are in the Northeast. This congestion will only get worse as the Northeast’s population swells to 70 million people by the year 2050. Unless work begins now to balance the region’s transportation network by increasing capacity on its rail and public transit, its highways and airports will simply be unable to move all of these people to where they want to go, and these capacity limits will place an artificial cap on the Northeast’s economic growth.

A Congested, Under-Maintained, and Critical Route

The 457-mile Northeast Corridor is the most congested railway in the country and one of the most heavily travelled corridors in the world, linking all of the economic hubs of the Northeast megaregion, including Boston, New York City, Philadelphia, Baltimore, and Washington, DC. Every day, the corridor carries roughly 750,000 intercity and commuter rail passengers. Amtrak and seven different transit agencies operate over 2,250 daily passenger trains on the Northeast Corridor, which also hosts some freight traffic, about 50 trains a day.

The closest that America has to high-speed rail, Amtrak’s Acela Express service, averages speeds of about 62 mph between New York City and Boston and 86 mph between New York and Washington, DC. Even though the Acela does not reach the top speeds common to high-speed trains across the world, it successfully competes with other travel options. Amtrak’s Acela and Northeast Regional trains currently capture over 70 percent of the air/rail market for trips between New York and Washington, DC, and over 50 percent of the trips between New York and Boston. Amtrak’s success in the Northeast Corridor is due to its ability to move passengers from center city to center city, and its superior reliability and comfort, compared to the other congested air and road options in the Northeast.

However, operations on the Northeast Corridor are hamstrung by train congestion, bottlenecks and other capacity constraints that limit the speed and reliability of trains. Due to decades of insufficient and inconsistent federal funding to maintain and upgrade this critical piece of infrastructure, a backlog of $8.8 billion in needed maintenance and repair projects has accumulated on the corridor. This backlog includes projects such as replacing the Baltimore and Potomac Tunnel in Baltimore, which was completed in 1873; obsolete movable bridges that get stuck in the open position, delaying trains; electrical systems that provide power to trains, but rely on components from the 1930s; and locomotives and passenger cars, many of which are more than 40 years old and frequently break down.

In the effort to improve the existing corridor and invest in capacity for future growth, this $8.8 billion worth of projects that have been put off for years represents a critical part of the first phase of work that must be done. These projects...
will provide concrete benefits for today’s corridor users. Reduced delays due to faulty and outdated infrastructure and equipment on the corridor will lead to greater reliability for rail passengers the moment they are complete.

**Plans for Investing in Future Capacity Needs on the Corridor**

In May 2010, Amtrak and a collaboration of Northeast states completed a three-year long planning process that resulted in the Northeast Corridor Master Plan, which outlined $13.8 billion worth of Phase 1 Priority Projects that can be pursued right now. These high-priority investments would make critical improvements toward achieving a state of good repair, adding capacity in key bottlenecks, improving on-time performance, and reducing travel times along the entire corridor. However, Phase 1 is just part of a total of $52 billion in investments that the Master Plan estimates are needed in order to accommodate the future growth plans of intercity, commuter, and freight rail services on the corridor by 2030.

If $52 billion only gets the Northeast Corridor the capacity it needs until the year 2030, what would it cost to add two new tracks for high-speed trains, which would provide more than sufficient capacity and transform the economic geography of the region for generations? On the heels of the completion of the Master Plan, two other detailed planning studies were completed, which concluded that a true high-speed rail could be built in the Northeast Corridor at about double the price of the Master Plan.

The first study by a team of planners at the University of Pennsylvania, School of PennDesign led by RPA President Robert Yaro and PennDesign Dean Marilyn Jordan Taylor developed a proposal for a dedicated, two-track high-speed rail right-of-way running the length of the Northeast Corridor from Boston to Washington. The proposal called for a new, faster, more frequent service from Boston to Washington, DC. In a follow-up study in 2011, the Penn team estimated that the proposal would cost $103 billion, including the $14 billion in Phase 1 upgrades to the existing corridor outlined in the Master Plan, and found that the project would have a strong benefit-cost ratio.

Currently, Amtrak only operates one Acela train per hour along the corridor. The high-speed service proposed by the Penn team would increase this to five to seven trains per hour between the economic hubs of the Northeast. Rail passengers originating in New York would be delivered to Boston in 100 minutes, Washington, DC in 90 minutes, and Philadelphia in 37 minutes. Passenger rail service with this type of speed and frequency would transform travel in the Northeast. Employees would be able to reach more jobs and employers would have access to a larger potential workforce. Several of the major international airports located in the Northeast, including JFK, Newark, Philadelphia, and Baltimore/Washington airports would also have stations connecting them into this proposed high-speed rail network.

Inspired by the Penn study, Amtrak developed its own “next-gen high-speed rail” plan that was made public in the fall of 2010. Amtrak also concluded that it would be feasible and beneficial to build a high-speed rail line in the corridor, but chose a different alignment between New York City and Boston. The estimated cost of Amtrak’s proposal is $117 billion.

Both the Penn and Amtrak studies called for new rail stations to be developed in Center City Philadelphia and Baltimore’s Inner Harbor due to tunnels and “S” curves in the alignment that restrict speeds in those areas. Creating straighter approaches in new tunnels and building new stations in more central locations would make it possible for intercity trains to reach much higher speeds and provide access to center city populations in both places.

Tunnel boring is a technology that has become much more efficient and cheaper in recent years, and tunnel boring machines are currently deployed all over the world. New York City has put five tunnel boring machines to work excavating tunnels for the Second Avenue Subway, East Side Access, and No. 7 Subway Extension projects.

Both proposals also found that high-speed rail would generate a range of regional economic and mobility benefits for the Northeast megaregion. The Penn team also studied how high-speed rail would help revitalize the economies of the Northeast’s under-performing market cities.
A world-class high-speed rail service in the Northeast Corridor would save...

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Source: Univ. of Penn, 2011.

rail stations in the heart of Center City Philadelphia and downtown Baltimore would foster economic development. There are significant opportunities for valuable infill development in the Market East area of Philadelphia and the Inner Harbor area of Baltimore.

The Penn study proposed that some of the capacity created by the new high-speed rail line be used to provide high-speed commuter rail services in the corridor, modeled after the successful Javelin trains that utilize capacity in the HS1 corridor in Southeast England. This combination of high-speed intercity and commuter services would expand and integrate commuter sheds and housing markets across the Northeast, increasing the economic productivity of the megaregion as a whole.

Institutional, Operational, and Financial Challenges

Two of the challenges facing the Northeast Corridor are its structure of governance, which is fragmented among eight states and the District of Columbia, and all of the congestion caused by the competing intercity, commuter and freight rail services that share its infrastructure. Ownership of infrastructure in the corridor is divided up among Amtrak, and the States of Connecticut, Massachusetts, and New York.

Currently, the corridor has neither the capacity nor the alignment that would allow the type of high-speed rail services offered in Europe and Asia, in which trains travel at speeds over 200 miles per hour on dedicated tracks. At the same time, as discussed above, the existing infrastructure requires several billion dollars annually for necessary repairs and enhancements to increase rail capacity to meet the projected demand by 2030. Achieving both goals—providing a world-class high-speed rail service and meeting the growing demand for commuter rail service on the Northeast Corridor—will require new management structures and new investment.

The most recent federal rail authorizing legislation—the Passenger Rail Investment and Improvement Act of 2008—called for the creation of the Northeast Corridor Infrastructure and Operations Advisory Commission through which the nine jurisdictions served by the corridor could provide input to Amtrak and the Federal Railroad Administration. This commission brings these nine parties together to confer on the design and administration of the corridor, and future plans and goals, but it does not fundamentally change the way the corridor is operated.

Reforms in the administration and operation of high-speed and intercity rail services in Europe suggest an alternative approach for the Northeast Corridor. The European Union requires national railroads to unbundle their train operations and infrastructure maintenance functions, and allow open access on their rail lines. Open access makes it possible for other train operators to offer competing services on the same rail lines.

Influenced by the European model, Amtrak recently announced the creation of a Northeast Corridor business division, focused on infrastructure and investment. There are plans to create a second Northeast Corridor business line to focus on operations. The NEC infrastructure division will be devoted to all of the funding, policy, and planning decisions related to improving the existing rail infrastructure and the development of a world-class, high-speed rail service on the corridor. The NEC operations division will focus on ensuring that rail operations on the Northeast Corridor are fast, safe, reliable, convenient and environmentally sustainable, and it will advance, deliver, and eventually manage all of Amtrak’s high-speed rail operations on the corridor.

Developing true high-speed rail in the Northeast Corridor is larger than any project that Amtrak has ever completed, and would be the largest and most complex public works project in the nation. A megaproject of this magnitude will likely require a single-purpose entity with the appropriate staff expertise, financial transparency, and ability to attract private capital and carry out its mission. This could be a Congressionally-chartered Northeast Corridor Infrastructure Authority or a subsidiary of Amtrak. Amtrak is currently leading a consultant study of how to finance high-speed rail in the Northeast Corridor and the opportunities for business investment in the corridor, which will be of value no matter how this effort is to be structured going forward.

Next Steps

In order to move high-speed rail from vision to reality, it is necessary to build consensus among elected officials and Northeast Corridor stakeholders that high-speed rail is both feasible and worthwhile to pursue here, despite the significant political, funding, and governance hurdles. This section outlines some of the key challenges to building this consensus in the near term.

- **Phasing Plan:** High-speed rail on the Northeast Corridor should be implemented in a phased approach. Each construction segment of this long-term project should have independent utility and provide early, short-term gains for today’s corridor users. Over time this approach will help build support for the continuation and completion of the full project. The most logical first phase of the project is the New York-Philadelphia segment, the busiest stretch of the corridor with the greatest need for increased capacity. Building two additional tracks between New York and Philadelphia, including new tunnels under the Hudson River, could be supported by a powerful coalition of the New York, New Jersey, and Greater Philadelphia business communities, and their elected officials.

While the rail infrastructure between New York City and Philadelphia is being upgraded, a series of short-term urban design projects surrounding 30th Street Station to improve pedestrian circulation and wayfinding, and transit accessibility could move forward immediately. Market East is another area where place-making techniques could be applied to revitalize the streetscape and give it more of an unique identity. This work could be done in conjunction with the planned renovation of The Gallery at Market East shopping mall. These early phase improvements would demonstrate to stakeholders in Philadelphia that support for this generational investment will result in near-term benefits phased throughout the life of the long-term project.

A first phase of construction could also include infrastructure improvements on other segments of the corridor (i.e. south of Philadelphia and north of New York) to broaden the geography of political support. This could include building new train platforms to expand capacity at Boston South Station, fixing the outdated overhead catenary wires in southwest Connecticut, and replacing the Baltimore and Potomac Tunnel.

- **Governance:** As discussed above, a multi-state governance structure is needed to develop the new rail infrastructure, receive government grants, manage the complex rail operations, and attract long-term private capital for this project. The infrastructure manager, whatever form it takes, could enter into public-private partnerships to manage different segments of project implementation and operations.

There are many opportunities for the private sector to take a stronger role in the development of infrastructure and the management of high-speed rail in the Northeast Corridor through public-private partnerships. One of the Northeast Corridor’s major advantages is its strong, proven market for high-speed rail. Both the Penn and Amtrak studies estimated that a high-speed rail line in the Northeast Corridor would be capable of generating annual net operating revenues that could be used to attract new private financing.
• **(Re-)Gaining Federal Support:** Launched in 2009, the federal High Speed and Intercity Passenger Rail program has directed $10.1 billion to conventional passenger rail projects around the country and one true high-speed project in California. Having suffered several setbacks, including the cancellation of projects in Florida, Wisconsin, and Ohio, by Republican governors in those states, the program failed to gain Congressional support for additional funding for conventional and high-speed rail projects in fiscal years 2011 and 2012.

This is the program that would logically provide federal funds for high-speed rail in the Northeast Corridor (and is also the program from which California is hoping to gain $17-18 billion for its statewide project.) However, even critics of the Obama Administration’s handling of the program agree that the one place in the nation well-suited for high-speed rail is the Northeast Corridor, suggesting that if a major project were launched here, it could gain support across party lines.

• **Environmental Regulatory Review Process:** The National Environmental Policy Act requires the preparation of an Environmental Impact Statement (EIS) for federally funded infrastructure projects. The Federal Railroad Administration has launched a planning study and programmatic EIS for improvements to the Northeast Corridor, which will be led by the FRA in cooperation with Amtrak and the northeastern states. This initial study will be the forum for evaluating long-term improvements to the Northeast Corridor, including different alignments for high-speed rail.

Under normal circumstances, the EIS could drag on for 4-5 years or longer. However the White House’s Council on Environmental Quality just announced that the Northeast Corridor EIS will be included in a pilot program to speed up the environmental review process. Despite this good news, it will require ongoing vigilance, and perhaps special legislation and additional resources, to ensure the EIS process does not become overly drawn out.

**The Business Alliance for Northeast Mobility**

In 2005, Regional Plan Association took a leadership role in advancing high-speed rail in the Northeast Corridor by establishing The Business Alliance for Northeast Mobility, which has grown to a coalition of over 50 of the Northeast’s leading business and civic groups. The Business Alliance promotes investments in the Northeast Corri-
and advocates for a set of transportation policies that encourage economic growth and make it more attractive to do business in the Northeast. The Business Alliance works to advance the following long-term goals:

- **Repair the Northeast Corridor and accommodate the future growth needs of all users:** Begin by funding the $13.8 billion in Phase I Priority Investments to replace the corridor’s many century-old bridges and tunnels, rail bed, tracks, switches, and ties, and communication and safety systems. These investments will ensure that this critical asset is brought back up to a state-of-good-repair (regardless of whether true high-speed rail is pursued), and reduce congestion and delays on the corridor, allowing operations to achieve faster trip times and greater reliability for today’s rail passengers.

- **Construct a world-class, dedicated high-speed rail service from Boston to Washington, DC:** High-speed trains will reach speeds of 200 mph, connecting New York and Washington, DC in 90 minutes, New York and Boston in 100 minutes, and New York and Philadelphia in 37 minutes. Dedicated tracks will create new capacity for high-speed trains and free up space on the existing Northeast Corridor for commuter rail traffic, which the region’s economy requires in order to grow in the future.

- **Identify and secure new, sustainable sources of funding:** These critical, long-term rail investments need funding that is dedicated and reliable—not dependent upon the annual appropriations process and subject to the changing whims of Congress—giving states and Amtrak the certainty they need to move ahead with the planning and construction of these major rail infrastructure projects.

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**References**

- University of Pennsylvania. 2010. Making high-speed rail work in the northeast megaregion. [http://studio.design.upenn.edu/hsr/node/81](http://studio.design.upenn.edu/hsr/node/81)
About

Regional Plan Association is America’s oldest and most distinguished independent urban research and advocacy group. RPA prepares long range plans and policies to guide the growth and development of the New York-New Jersey-Connecticut metropolitan region. RPA also provides leadership on national infrastructure, sustainability, and competitiveness concerns. RPA enjoys broad support from the region’s and nation’s business, philanthropic, civic, and planning communities.

The Business Alliance is staffed and managed by RPA, through its America 2050 program, a national initiative to meet the infrastructure, economic development and environmental challenges of the nation as we prepare to add about 130 million additional Americans by the year 2050.

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